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SOME CONSIDERATIONS UPON THE CURABILITY AND TREATMENT OF OPHTHALMIA NEONATORUM.[1]

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IN December, 1893, in my service at the Presbyterian Eye, Ear and Throat Charity Hospital, a baby came out of an attack of ophthalmia neonatorum with scarred corneæ. There will be useful but never perfect sight. In the summer of 1892 I saw a child at the Hospital, in the service of a colleague, with one cornea badly damaged. In both instances the medical attendants can, I think, be acquitted of blame. My case was doing well. On November 30, my assistant, Dr. C. W. Hartwig, found the corneæ clear. The child was not brought to the Hospital again until December 8, though the mother was warned to come daily, or send word if she could not come. The corneæ were hazy when she returned. After three or four days attendance, she again absented herself a week. The mother of the other child was directed to come to the Hospital Sunday morning. For some domestic reason she stayed away from Saturday to Tuesday. In both of these cases home cleaning was bad, and failure to come regularly to the Hospital was but part of general neglect. The child under my care was badly nourished. In the *Journal of the American Medical Association* for November 25, 1893, is a brief account of a case lost in the practice of Dr. B. Alexander Randall, of Philadelphia. While reading it, I recalled a baby I saw three or four years ago, with both corneæ destroyed. A personal and professional friend, who had charge of the case, gave me a full account of it. If his directions were carried out the child should

[1] Read before the Clinical Society of Maryland, February 16, 1894.

have recovered. Dr. Randall gives his case in detail in *The Trans. Am. Oph. Soc.* for 1893. So far as I can see, no one could have done more than he did.

In the light of these cases, I have reviewed my own experience and observation with special reference to this: Is purulent conjunctivitis of the newly born always curable? Personally, the case mentioned is my only failure to preserve the cornea, if unaffected when coming under my care. Again, excepting the cases above, I have never seen a child blind from this disease, in whose case I could not find some radical fault in treatment: in the time when proper treatment was commenced, or in the method pursued. But such cases as Dr. Randall's, whatever one's own experience, compel a negative answer to the question asked. Fortunately such cases are exceptional. The large majority can be cured by proper treatment. A few cases, however, do not yield to cleanliness and the daily use of a one or two per cent silver solution, but yet are curable. What can cause the delay, and how should ordinary methods be modified?

A frequent cause, I am satisfied, is rough handling. The disease is usually met among the poor. Trained nurses cannot be employed. Yet, half-hourly cleanings are a necessity, and the home folks must attend to this part of the work. How can they, with least danger to the eye? In my opinion, it is wrong to allow them to use any hard instrument beneath the lids. Not unfrequently they are provided with absorbent cotton, a probe, matchstick or tooth-pick, with instructions to wrap the cotton on one end of the instrument and wipe the pus from inside the lids and off the eye. As a rule, this results in separating the lids, and passing the instrument blindly toward the eyeball. I have seen the conjunctiva bruised, and the corneal epithelium abraded by this tooth-pick traumatism, An effective and safer way, and one easily learned, is to separate the lids gently at the same time retracting and slightly everting them. Frequently repeated, such a procedure brings pus to the surface by the motion of the retracting and everting thumb or finger.

A persistent discharge, diminished little, if any, by cleanliness and the daily use, for a week, of a one or two per cent silver solution suggests to me this: Is the remedy being used properly? Should the silver be discontinued or used in stronger solutions, or in the form of the mitigated stick? I believe a case often turns upon the correct solution of this. If the silver be not indicated as an antiseptic and astringent, it should be stopped, for it may cause

incurable opacity by its caustic properties. If infection be too virulent to be overcome by a weak solution, or if, whatever the pathological explanation, faithful treatment has failed to benefit, and certain conditions persist which are known to call for the exhibition of silver, no greater mistake can be made than to discontinue it. In November, 1890, I presented a paper to the Maryland Medical and Chirurgical Faculty at its semi-annual meeting in Cambridge, Md., upon "some unusual effects of remedies in common use for eye troubles." The paper was subsequently consigned to oblivion in the short-lived and defunct "*Baltimore Medical Record.*" I narrated some cases of ophthalmia neonatorum which failed to improve under silver, used for weeks, but which recovered as soon as the silver was stopped, and borax or alum and zinc substituted. Later experience has confirmed what I said then. Not only may silver fail to cure, but its persistent use may destroy the cornea. Last January I saw a well-nourished baby boy, 4 weeks old, with slight conjunctival purulency, soft lids, smooth palpebral membrane, ocular conjunctiva unaffected, both corneæ opaque. The father told me that mattering had begun on the fourth day. Under the direction of a physician, the eyes had been cleaned each half-hour, day and night, for one week. The medical attendant, who was called in as soon as purulency was noticed, applied a silver solution once daily with decided benefit. At the end of a week this physician left the city for a time, saying the eyes were clear. Some students at the dispensary where the child had been treated succeeded the physician. They, the father said, "had dropped the nitrate of silver solution daily on the eyeball" until the day before he came to the Presbyterian Hospital: *i. e.*, for sixteen or seventeen days. All this history, save the *act* of the students, including their visiting the case, I have since confirmed. The opacity is characteristic of cauterization, not of ulceration, No gonorrhœic history in either parent was obtainable, nor do I believe there was such a condition.

As nearly as I can give it, the clinical condition demanding the non-use or discontinuance of silver is: conjunctival purulency, unaccompanied by the swelling or tension of the lids, characteristic of infiltration, and without papillary swelling of the conjunctiva, or much of it, on the upper lid, and the deep red color seen in the conjunctiva in severe cases. This is the condition now and then seen in cases that come under the oculist's care for the first time, after five or six weeks of purulency, having clear corneæ, although there has been little or no treatment. Again, starting as

severe cases, routine cleanliness and the one per cent solution soon bring them to this condition, and then improvement ceases so long as the silver is continued. Discussing Dr. Randall's case at the Ophthalmological Society, Dr. J. A. Andrews, of New York, spoke of this matter as follows: "Three years ago * * * I found that the children transferred from the Maternity Hospital to the Ophthalmic wards of the Charity Hospital were losing their eyes, and I believe the reason was to be sought for in the treatment rather than in the disease. I had come to the conclusion that a considerable percentage of the cases of ophthalmia neonatorum were non-gonorrhœic. * * * The above was quite common in one ward, and I set to work to find out the cause," Examination of the vaginal discharge of the mother, the discharge from the baby's eyes, and plate cultures made from the air of the room gave no satisfactory explanation. Quoting farther: "I told the physicians I believed the nitrate of silver was spoiling the eyes. I had become convinced of this some years before. I am speaking of ophthalmia neonatorum not due to gonorrhœic infection. In such cases, the simple washing of the eye, the application of cold, and the flooding of the eye with vaseline cured every case, but where the silver was used there was always mischief done to the cornea. The eye was not necessarily lost by a single application of silver, but where this treatment was persisted in the eye was invariably lost. * * * Where there is little discharge and swelling of the conjunctiva, the silver should be used very sparingly or not at all." A more important lesson cannot be learned than this: there comes a time in the progress of a certain percentage of cases when, although there is still purulency, nitrate of silver will not cure; on the contrary, it perpetuates the discharge, and if persisted in clouds the cornea. Provided the silver is stopped, it makes little difference what unirritating remedy is used; the eyes get well. In a certain number of cases, purulency continues a long time, and causes anxiety; but in my experience, such cases get well eventually, provided the eyes are kept clean. If silver be used to stop pus formation, although the conjunctival condition does not demand it, nothing but harm results,

I speak of stronger silver solutions than two per cent, or of the mitigated stick with hesitation. Cases demanding such remedies are rare. That they occur at all is not universally admitted. The remedies are capable in unskillful hands of doing injury. Only one with trained judgment and a trained hand should advise or apply such agents. There is a connection etiologically and

symptomatically between gonorrhœic ophthalmia and many cases of purulent conjunctivitis of the newly born. But, usually, points of difference call for different methods of treatment. In gonorrhœic conjunctivitis of the adult one finds, as a rule, great lid swelling and infiltration, with inflammation and chemosis of the ocular conjunctiva. These symptoms are rarely so intense in ophthalmia neonatorum as to demand the special attention they require in the adult. This disassociation can, I fear, be carried too far. Certain things in an adult call for a certain remedial measure. Because it is not called for as a rule, in the infant, it may be omitted when it would do good. Such, I believe, is the case with strong solutions or the mitigated silver stick. Pus is the chief source of danger to the child's eye. It comes from the palpebral conjunctiva. A one or two per cent solution, applied once a day, with constant cleanliness, usually suffices to stop pus formation and save the eyes. But now and then such a case as this is seen—the first upon whom I used the mitigated stick:—a sickly, bottle-fed infant, profuse discharge, lids greatly swollen and congested, conjunctiva of lids rough and swollen. Two weeks of cleaning and a one per cent solution did no good. The corneæ became hazy. On the statement of Soelberg Wells that such cases, common enough in the adult, are occasionally seen in infants, and are benefitted by the mitigated stick, I applied it. Pus secretion ceased almost entirely. Cold applications were used. In twenty-four hours the eschar was thrown off, and pus appeared again. But the corneæ had had twenty-four hours rest, while the lids were softer. A second application was made in forty-eight hours, and from this recovery was uninterrupted, the corneæ clearing. This case occurred in my early practice. I believe now, as firmly as I did then, that the eyes would have been lost but for this step. A similar case has just been discharged cured. Boy was admitted January 26, three weeks old. Mattering eyes since third day. The eighteen days between the appearance of the disease and admission to the hospital were given to sugar of lead solution and rose water. Corneæ were clear. Half-hourly cleaning and the daily use of a one and then two per cent silver solution did not affect pus formation. On February 4, after ten days, Dr. Hartwig, noting the rougous conjunctiva and swollen lids, pencilled the membrane with a thirty grain solution, and followed it with cold and a weak copper and alum solution—grs. i and iii to ℥i. Pus formation ceased, returned in a lessened degree in forty-eight hours, and the case speedily recovered. Another case, now under care, was not benefitted by nine days treatment from February 2 to 11. Deeply congested, swollen, infiltrated lids, rough, hypertrophied palpebral membrane, profuse discharge were the con-

ditions observed on the 11th, when the conjunctiva of each upper lid was pencilled by Dr. Hartwig with the half-dram solution, and iced cloths applied. The alum and copper was substituted for a one to four-thousand corrosive solution, used every fourth hour. There was lessened purulency on the 12th with softer lids. More on the 13th when the pencilling was repeated. To-day (16th), purulency is very slight, the lids are not infiltrated, and the child is practically well. In two or three of the very few cases where I have thought this treatment necessary, I have noted a rather long duration of slight purulency, without return of conjunctival or lid swelling. I have not seen scar formation. Children, prematurely born, those brought up on artificial food, those with poor digestion constitute a dangerous class. (Knapp, Howe—*Am. Oph. Soc. Trans.*, 1893). Powers of resistance are low. With my experience in using strong solutions and the mitigated stick in obstinate cases, I should, if the condition of the lids and conjunctiva indicated it, use one of them earlier with such infants than with those healthy and nursing. In some of these cases I found gonorrhœic history in one or both parents. In the two recently treated no such history was obtainable. A bacteriologic examination of the conjunctival pus was not made. I am not disposed to think that such examination is of so great importance, as either a prognostic or therapeutic indication, as the condition of the lids and conjunctiva. Three years ago my friend, Dr. Robert L. Randolph, (personal communication), examined the pus of twenty-six cases at the Presbyterian Hospital. He found the gonococcus in twenty-four. Some of these babies were under my care, and in every instance, where the cornea was clear the day of admission, the eye was saved. I am not aware that any eyes were lost, and am confident I should be, were such the case. On the other hand, Dr. Andrews (loc. cit.) examined the secretion in eighty-eight cases and found the gonococcus in both mother and child in but two instances. He says: "The typical clinical picture of gonorrhœic conjunctivitis was absent in eighty-six cases; nevertheless, five eyes were lost among five of the infants, and one infant lost both eyes, the disease being in these six cases non-gonorrhœic." Dr. Andrews attributed the loss of these eyes to the abuse of silver.

To put all the foregoing into a single conclusion: Conjunctival purulency in a newly-born infant does not necessarily demand nitrate of silver. The appearance of the lids and conjunctiva decide its use as well as its continuance and strength.

Finally, I wish to protest against a practice which I believe is only too common: the instillation of cocaine in purulent conjunctivitis to allay pain. Such a practice seems to me deliberately inviting trouble.

816 Park Avenue.

TRAUMATIC PARESIS OF LEFT INFERIOR RECTUS COMBINED WITH TRAUMATIC INSUFFICIENCY OF LEFT EXTERNAL RECTUS.

By Charles Zimmermann, M. D.,
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On January 20, 1893, Lawrence Kennedy, a healthy sailor, aged 36, who never had any eye disease, received a blow on his left eye from a fist coming from his left. His lids swelled so that he could not open his eye, but he ascertained that when he pulled them open with his fingers he could see. January 30, he came to me with the following condition of his left eye: The lids were not swollen, but the bluish and yellowish discoloration of their skin indicated ecchymoses in the state of absorption. The palpebral fissure was as wide as on the right side. Under the temporal portion of the ocular conjunctiva was a considerable accumulation of blood in consequence of the blow which had struck this side of the eyeball. V., L. E. $= \frac{5}{15}$, V., R. E. $= \frac{15}{20}$, V. field, not defective. He complained of diplopia when looking straight and in the whole lower portion of the field of fixation. Especially in walking on the street he was greatly annoyed by seeing objects double. If he wished to avoid double vision in a straight forward direction he bent his head forward, turned it to the left and looked to the right and a little upwards.

These visual disturbances, as well as the subconjunctival extravasations pointed to an affection of ocular muscles, caused by a direct lesion, viz: partial laceration of their fibers, contusion or ecchymoses into the sheaths of the muscles, mechanically impeding their movements. As there was no manifest lack of mobility of the eyeball, the examination of double images had to be resorted to in order to arrive at an accurate diagnosis as to which muscles were paralyzed. The false image belongs to the left eye and has a vertical, a lateral, and a torsional displacement in and below the horizontal plane. In the upper field of fixation there is no diplopia.

Vertical Displacement. The false image is lower and nearer than the true, increasing in distance downwards and in abduction (to the left). If the candle is placed one meter from the eye the false image is about 25 cm. lower than the true, when looking to the left and downwards. This distance decreases towards the right, so that finally the top of the false touches the bottom of the true image.

Lateral Displacement. The double images are homonymous (to the left). In looking to the left and downwards (abduction) it is 5 cm. to the left; in adduction it reaches the true one on the left side. If prism 12° is held before the right eye, base upwards, the false image rises, still remaining below the true, but its lateral distance increases to about 5 cm. in the horizontal plane (without prism 1 cm. when looking to the left, perpendicular below when looking straight forward). If the same examination is made in the upper field, in order to exclude the original diplopia, homonymous double images with lateral distance are observed.

Torsional Displacement. The false image diverges with its upper

end from the true image. Although this sloping is very rarely observed by patients, our patient noticed it himself without having his attention called to it.

Diagnosis. The displacement of the double images downwards indicates a paresis of superior oblique or inferior rectus. In this case it must be the inferior rectus, as the vertical distance increases in abduction, which constitutes the essential point of distinction. The sloping to the affected (left) side is also in conformity with a paresis of the rectus inferior, but the false image is homonymous, and the rule is that it should be crossed. (In paralysis of the superior oblique the double image is homonymous, but slopes towards the sound eye). The reason for this may be, first, a secondary contraction of the antagonist, *i. e.*, the superior rectus; second, inclination to convergence by previous position of equilibrium, for instance, insufficiency of external rectus. In the former case we would also expect diplopia in the direction of action of the antagonist (superior rectus), *i. e.*, in the upper field of fixation in which, however, our patient had monopia. In regard to the latter case, previous disturbance of equilibrium by insufficiency of the external rectus is very rare, and our patient had no ocular affection before. To be sure the prism test revealed an insufficiency of the external rectus (even in the upper part of the field of fixation), but it was brought about by the injury, the greatest amount of blood being located at the region of this muscle. Thus, the traumatic insufficiency of the external rectus explains the displacement of the double images in our case, as in looking downwards, the divergence caused by the paresis of the inferior rectus was changed into convergence. The insufficiency also accounts for the increasing lateral deviation in looking downwards. As long as there exists monopia, as in the upper field of fixation, the external rectus, although weakened by the trauma, will overcome the effort of contraction by fusion in the interest of binocular vision, but as soon as from the loss of function of the inferior rectus double vision sets in, it does not evolve any power for action, and pathological convergence occurs, converting the originally crossed into a homonymous double image. There was no other treatment required but massage, to favor the absorption of the extravasations of blood into the sheaths of the muscles which restricted their function, and a bandage.

A week later, on February 6, the condition had so far improved, that in looking to the left and downwards the false image was only 18 cm. lower, and only 3 cm. to the left. On February 14, the patient felt so much better that he resumed his occupation.

433 Milwaukee Street.

A CASE OF CYSTICERCUS OF THE VITREOUS.

By W. Cheatham, A. B., M. D.,
of Louisville, Ky.

THIS affection being so rare in America, England, France, and countries other than Northern Germany, I feel justified in reporting a case that came under my observation.

Mrs. F., aged 42, of Irish parentage, consulted me May 22, 1893, concerning her left eye. January, 1893, she had some severe acute inflammation of her left eye in which there was intense pain and edema of the lids, which lasted for some weeks. She now has vision of left eye $^{15}/_{40}$ with no improvement by glasses. She has some scars of upper part of cornea simulating those found in trachoma, with slight pannus. I was surprised on everting the lid to find no indication of her ever having had trachoma. Vision, right eye $^{2}/_{200}$ and eccentric. She said her right eye had been blind—following a spell of sickness—since she was fifteen years old, or twenty-seven years. She did not come to consult me concerning her right eye, yet as a matter of routine, I examined it. I found all the media perfectly clear. Just at or over right macula I discovered a sac or cyst, pedunculated, the pedicle being attached to the retina above and external to the macula, the body of the sac extending down and in, over the region of the macula. The sac with its pedicle appeared a bluish gray, and opaque, except a part of the wall toward me about the size and shape of the optic nerve entrance, which was transparent and through which the deeper or other wall could be seen.

The eye was emmetropic with the ophthalmoscope. The highest or most prominent part of the sac, just at the transparent part referred to, could be seen best with a + 10 D. showing an elevation of about 2.3 mm.: The other cyst wall could be seen through this transparent portion best with about a + 2. D. showing an elevation of about .52 mm. The sac was ovoid in shape with the edges at some points serrated, and at one point, down and in there was quite a projection. Over this sac small blood vessels could be seen, one up and in, which could be traced to a larger retinal vessel close by. No motion could be discovered in this opaque cyst. Forming something of a crescent from the lower and outer part of this sac was a transparent, reddish cyst; at the upper part of this cyst could be seen two spots looking like air bubbles, which were no doubt the parasite's suckers. This cyst, when watched closely, could be seen to have a distinct rythmical motion; a spot of pigment beneath it would appear and disappear; the motion was perfect. Above the attachment of the pedicle of the cyst could be seen two white crescent-shaped spots, no doubt the points of entrance of the parasite. The retina between the cyst and optic nerve presented the appearance of a recent detachment. Several large vessels run from the nerve direct to the sac, some of them disappearing under, and reappearing

on the other side. There were many more large vessels taking this course than usual. This would probably indicate that the trouble is of long standing.

The vitreous seemed to be detached over the optic nerve entrance.

Mrs. F. gave a history of several serious attacks of what she called congestion of heart and lungs several years ago. For six or seven years, up to January, 1893, when her left eye was so badly inflamed, her health had been very good. She thinks she is going through her "change." Left eye usually inflamed some every four weeks.

This case, besides being the second so far as I know of reported in America, presents other points of interest. Could this parasite possibly have been the original cause of the loss of vision of right eye twenty-seven years ago? I think this possible and probable. The vitreous is clear and but little damaged; but a small part of the retina and choroid are damaged. The parasite, from the appearance of the parts, seems to have left its old bed, and is migrating. Mrs. F. does not remember of ever having had any pain in her right eye. Could the disease she has had in her left eye be sympathetic? Sympathetic affections have their exacerbations and their times of quiet, as we all know.

Foster, *Encyclopedic Medical Dictionary*, page 1237, says: "Cysticercus cellulosæ is the larval stage of tenia solium. It has a quadrangular head, a long cylindrical body, and an elliptical caudal vesicle, and is from ten to fifteen mm. in length."

Manthüer describes the animal as follows: "The worm is provided at its posterior end with a round cyst-like formation which acts as the receptaculum scoliocis, into which the animal can withdraw, presenting when in this position the appearance of a round, whitish body. A small hole marks the mouth of this small receptacle. When the animal protrudes its head and neck out of the receptacle its body appears to be sprinkled here and there with calcareous deposits, and presents sometimes a smooth and sometimes a wrinkled surface. The body decreases in size towards the neck, to which is attached the head, with its four flattened down, but angular projections. A round-shaped snout can be projected by the animal from the center of its head, and this latter is provided at its base with a double row of hook-like tenacles which are capable of retraction. Each of the angular projections of the head is, moreover, provided with a rounded sucking apparatus."

Schmidt-Rimpler, page 276, says: "The embryo enters the stomach of the suitable host, in the food or water, loses its covering through the action of the gastric juice, bores into the blood vessels with its hooks and begins to wander. Finally it becomes

settled and now begins the second stage of its development in which it is known as cysticercus. It is converted into a vesicle with fluid contents."

All authors agree that they travel by the blood current. Cysticercus may occur in any part of the eye or orbit. They have been seen in the orbit, lids, conjunctiva, iris, lens, vitreous, choroid and retina. They are found more often in the posterior part of the eyeball than in the anterior. They are quite common in Northern Germany where uncooked meats are eaten; less often in Southern Germany, France and Italy. There have been three cases reported in Austria. Brudenell Carter says none have been seen in England, but Soelberg Wells reports a case in his book, page 328. In Northern Germany, Graefe saw eighty cases in 80,000 patients, or one in 1,000, in the deeper tissues of the eye; three in the anterior chamber, five beneath the conjunctiva, and one in the orbit. Hirschberg in six months saw 2,100 new patients in five of which he saw cysticercus, or one in 420 cases of eye diseases.

Of the one other case seen in this county reported by Dr. Minor, Loring, on page 188, says: "From the ophthalmoscopic appearances there was reason to believe that it was a true case of cysticercus, although it was not absolutely proved to be so."

Yet, from Dr. Minor's description of the case, and the ophthalmoscopic appearances, page 193, (Loring), I do not think there can be any doubt of its having been a case of cysticercus cellulosæ. How long a cysticercus can remain in an eye is in doubt. Cases of two and four years standing are common. Von Graefe saw a case in 1856, which was twenty years afterward seen intact by Hirschberg. Others have reported cases of long standing with vision nearly perfect. My case, as I stated before, is possibly of twenty-seven years standing. Usually though in from fifteen to twenty months irido-cyclo-choroiditis follows, and sometimes panophthalmitis with total loss of the eye. Von Graefe and Hirschberg state that there is not much danger of sympathetic inflammation, although sympathetic irritation is often present. Jacobsen reports sympathetic amblyopia. Two cysts have been seen in one eye, but none reported of both eyes being involved. Patients with cysticercus do not have tape-worm. The presence of this parasite in the eye is so dangerous to the vitality and the usefulness of the organ, that its removal has been undertaken and with success, but not with very flattering after results, when it is located in the posterior part of the organ. When in the iris a section of this membrane can be removed that holds the parasite.

303 West Chestnut Street.

A DEAD CYSTICERCUS CELLULOSÆ SUBRETINALIS.

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THE cysticercus cellulosæ is seldom or never found in the eyes of Americans, and is uncommon now even among those people of Germany, for instance, who are much addicted to eating raw pork. As an evidence of this, very few of the recent text-books published in this country say anything about this parasite. The rarity of its occurrence even in von Graefe's day may be seen from the statistics published by him (*Archiv. f. Ophthal.* Bd xii, p. 174). In a total of 80,000 patients he had seen only about eighty cases of ocular cysticercus, the majority of which were in the vitreous or beneath the retina, especially the latter. Its development takes place between the retina and choroid, and gives rise to detachment of the former. Later on it perforates the retina and the parasite passes into the vitreous. As long as the vitreous remains clear the vesicle can be seen and its diagnosis made by the movements of the neck which at times is pushed out and retracted. Later the diagnosis is rendered more difficult by the turbidity of the vitreous due to the parasite setting up an irido-cyclitis which may lead to destructive inflammation of the eye.

With the ophthalmoscope it seems to be somewhat dumb-bell-shaped, bluish white in appearance, with a bright orange margin, and a sharply defined outline. A very bright spot is seen at one point of the cyst which corresponds to the head of the parasite. Wave-like motions along the contour of the cyst should be looked for. Delicate veil-like opacities forming in the vitreous humor are almost characteristic of the presence of cysticercus. The history of such a case, from Dr. Casey A. Wood's practice, will be of interest owing to the unusual signs present.

F. G., German, aged 46, presented himself June 20, 1893, complaining that he could not see as well as he did four months previous. About the middle of May noticed a spot like a spider in front of left eye. With the exception of insomnia and nervousness his general health was good. No history of tapeworm, but has recently, however, had "rheumatism" probably of the true articular variety. His field of vision in the left eye is deficient in lower and outer segment. V., L. = $\frac{20}{40}$; V., R. = $\frac{20}{20}$. Tension

normal in both eyes. The patient has never had any pain in the eye, puffiness of the lid, or redness of the ocular conjunctiva. There are no enlarged scleral veins or episcleral vessels. The media are clear, and fundus is well seen with the ophthalmoscope, a bluish white, translucent motionless growth, rounding and smooth, with a single teat-like projection occupies the upper, outer, and anterior portion of the vitreous cavity of the left eye. The retinal vessels are not enlarged and can be seen coursing over the surface of the tumor.. A small central, but motionless body, can be seen within the retinal cyst wall. No portion of the tumor can be readily seen through the undilated pupil. There has been no change whatever in the signs and symptoms, and no increase in the size of the tumor since it was first seen six months ago.

The diagnosis in this case has been rather difficult, owing to the absence of the in-and-out movements of the neck, the bright spot which corresponds to the head, and the wave-like motions usually seen in subretinal cysticercus. This can be explained in only one way: the parasite is dead, and the cyst contents have not increased.

A dead and encysted cysticercus is amongst the rarest things reported in ophthalmology.

A FURTHER COMMUNICATION ON THE RESULTS OF A BACTERIOLOGICAL EXAMINATION OF THE PIPETTES AND COLLYRIA TAKEN FROM A TREATMENT CASE USED IN OPHTHALMIC PRACTICE, WITH THE EFFECTS OF INOCULATIONS.[1]

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At the meeting of the College of Physicians, of Philadelphia, April 3, 1893, we presented a preliminary communication[2] upon the subject contained in the title, and came to the results which were summarized in the following tables, and which are here reproduced:

The examination had not gone sufficiently far at that time to plate the cultures and separate the organisms which were present in the lotions and pipettes. The termination of this research is as follows:

The cultures yielded by the cocaine pipette and cocaine solution were found to contain the micrococcus aquatilis, the bacillus liquefaciens and the proteus vulgaris. In addition, the bacillus of Vignal was detected, which must have been an accidental and unusual contamination.

The boric acid solution contained the same germs as those found in cocaine, with the exception of the bacillus of Vignal.

The atropine lotion, which, when first examined, showed no growth but afterwards a fungus, contained two months after the first examination the micrococcus prodigiosus and the bacillus liquefaciens.

[1] Read before the College of Physicians, of Philadelphia, March 7, 1894.

[2] Trans. of the College of Physicians, 3d series, Vol. xv., p. 110; also Therap. Gazette, Sept. 15, 1893. The literature of the subject and previous work in this line of research are reviewed in this communication.

PIPETTES.			
Unused pipette.	No growth.		
Cocaine pipette.	Growth on potato, agar-agar, and beef-broth.	Same germs as those found in cocaine solution; inoculation caused purulent irido-choroiditis.	Rubbing abraded cornea with culture produced moderate ciliary injection, and slight clouding of cornea.
Fluorescine pipette.	Growth on potato.	Inoculation caused slight iritis.	
Atropine pipette.	No growth.	Pipette had been frequently cleansed with sublimate lotion.	
Pyoktanin pipette.	No growth.		
Homatropine pipette	No growth.		
Eserine pipette.	Growth on all three culture media.	Slight iritis caused by inoculation, which speedily disappeared.	
Boric acid pipette.	No growth.	This pipette had often been cleansed with sublimate after use.	
FLUIDS.			
Boric acid lotion.	Active growth on all three culture media.	Inoculation into anterior chamber produced purulent irido-choroiditis.	Rubbing abraded cornea with culture produced moderate ciliary injection, and slight clouding of cornea.
Atropine lotion.	No growth at first; one month later active growth.	The growth—a fungus—was not used in inoculation, as it was of same nature as that obtained from the fluorescine dropper.	
Homatropine lotion.	Growth on all three culture media.	Inoculation produced slight iritis, which disappeared in fifteen days.	
Cocaine lotion.	No growth at first; two months later active growth on all three culture media.	Inoculation produced purulent irido-choroiditis.	Rubbing abraded cornea with culture produced moderate ciliary injection, and slight clouding of cornea.
Fluorescine lotion.	Fungus growth on agar-agar.	Not used in inoculation; growth same as from dropper.	
Bichloride lotion.	No growth.		
Nitrate of silver lotion	No growth.		
Eserine lotion.	No growth.		

The homatropine lotion contained the bacillus liquefaciens and a fungus.

At the first examination the eserine pipette produced a growth on three different culture media, but the solution of the drug appeared sterile. Two months later the same solution, although tightly corked, showed a marked fungus growth (aspergillus glaucus). The bacillus liquefaciens and bacillus implexus were also present.

Inoculation into the eyes of rabbits with the individual cultures were made in the same way as in our previous experiments, namely, one-tenth of a cubic centimeter of an emulsion of the surface growth upon agar in the water of condensation, was injected, with all proper precautions, into the anterior chamber by means of a syringe. The daily appearances of the rabbits' eyes were exactly the same as those detailed in the first research, and need not be repeated.

The injurious effects of the inoculations from the cocaine and boric acid solutions, which were the same in both cases, were due to the bacillus proteus vulgaris. The bacillus liquefaciens produced an iritis, or more properly, a hyperemia of the iris, which disappeared in a week.

The micrococcus prodigiosus from the atropine solution produced the same effect, namely, purulent iritis, while the bacillus liquefaciens caused a moderate iritis, or hyperemia.

An inoculation of the culture of the bacillus implexus obtained from the eserine solution caused a purulent inflammation, while the bacillus liquefaciens obtained from the same source provoked only a moderate hyperæmia of the iris.

As has several times been shown by observers, and as one of us (E. A. de S.) has confirmed, an eserine solution, which contains the fungus growth, no longer responds to the tests characteristic of eserine. Francke has found that solutions of atropine and eserine, sterile at first, after standing for some time become contaminated, even if the bottles have been carefully corked. The germs appear to get in at the sides of the stoppers. This, it will be remembered, was the result in our experiments.

It becomes evident, then, that the following organisms are liable, sooner or later, to infest solutions of the alkaloids used in ophthalmic practice, namely: the micrococcus aquatilis, the bacillus liquefaciens, the proteus vulgaris, the micrococcus prodigiosus, the bacillus implexus, perhaps the bacillus of Vignal, and various fungi, particularly the aspergillus glaucus. Of these organisms the pro-

teus vulgaris, the micrococcus prodigiosus and the bacillus implexus introduced into the anterior chamber are capable of producing a purulent inflammation of the iris, cornea deeper coats of the eye. Exactly similar inoculations with the bacillus liquefaciens resulted in a hyperemia of the iris, possibly a slight iritis, which disappeared in a week; with the micrococcus aquatilis the effect was negative.

The growth of fungus in these solutions appears to have little deleterious effect upon the eye, but, as already noted, has the power, with eserine, at least, of changing its chemical composition.

As shown in the first research, these organisms, when inoculated upon an abraded cornea, the anterior chamber not being open, produced a moderate amount of ciliary injection and clouding of the corneal structure, but did not in our experiments call into existence a purulent inflammation of the eye.

It is unnecessary to repeat the methods of properly sterilizing alkaloidal solutions. These were summarized in the first paper, and have been published many times previously. Perhaps the most convenient and ingenious device for this purpose is the one introduced by Dr. Stroschein, of Wurzburg. [3]

[3] The experiments were performed in the laboratory of Dr. E. A. de-Schweinitz, and the preparation of the cultures and separation of the micro-organisms are entirely his work. We are indebted to Dr. William M. Gray for preparing the slides of the rabbi to eyes, which showed the lesions of an extensive purulent irido-choroiditis, both in the present and previous research.

TWO INTERESTING CASES OF CONGENITAL DEFECTS OF THE EYES: ONE OF DOUBLE CATARACT; ONE OF LARGE COLOBOMA OF IRIS, CILIARY BODY, CHOROID, AND OPTIC NERVE SHEATH.

By Edward Swasey, M. D.,
of Worcester, Mass.

DOUBLE CONGENITAL CATARACT.

Mr. L., aged 26, operative in a thread factory, consulted me in January, 1894, to have his eyes examined for glasses to ascertain if these would improve his vision. He had been conscious of imperfect sight all his life, and has tried various glasses as found in the optician's stock, but had never had his eyes examined. His work was such that his vision served him fairly well. The eyes appeared at first quite normal, but on closer inspection both pupils gave a smoky appearance. Vision in each = $\frac{20}{200}$; improved to $\frac{20}{70}$ by a sph. — 1. D. lens. After some time he felt sure he saw quite as well without any glass. Javal showed 3. at 90° or 180° in each eye, but the proper cylinders of minus or plus gave no real improvement. The ophthalmoscope showed at the central posterior pole of each lens a perfectly round black spot. From the border of the pupil in the normal state could be seen fine needle-like opacities, quite resembling the finest ice crystalization passing backwards, and all seeming to converge to the black spot at the posterior pole. With the pupils widely dilated by atropine, this opacity was seen to be central, perfectly circular, and the convergence of the fine, straight opacities more clearly seen. The patient was sure he saw better with the pupils well dilated. The fundus was but indistinctly seen, but no abnormal condition was detected; no remnant of the hyaloid artery was seen.

The condition was perfectly symmetrical in every detail. There was no nystagmus. Whether this case presents any peculiar conditions in the form of its lens opacity, being so perfectly conical, and its point where the hyaloid artery reaches the lens and giving the appearance of a truncated cone, I know not, but I do not find just such a condition spoken of frequently. There was no family history of eye troubles. The remedy proposed was a double iridectomy downwards and upwards as being the most useful in all kinds of eye work.

COLOBOMA OF IRIS, CILIARY BODY, CHOROID, AND OPTIC NERVE SHEATH.

Miss P., aged 19, typewriter, consulted me in January, 1894, to see if glasses could be fitted for her eyes to relieve a good deal of eyeache and headache which she had more or less constantly. Her vision R. E. = $\frac{20}{15}$; no Hm., L. E. = discern a moving hand before her eye, facing a bright

window. Javal gave .50 at 90° in the right, and same in the left. The ophthalmoscope showed R. E. emmetropic, fundus normal, save only for a small black spot the size of a pin-head half way down the retinal field under the optic disc, and the surrounding pigmentation for a small area at the same spot was slightly lessened. The iris was perfect.

In the left eye there was central downward coloboma of the iris, and a fine line of pigment tissue across the lower angle. The opposing edges of the coloboma were of a somewhat dirty yellow color as compared with the body of the iris, and the iris was less in circumference than its fellow, the color the same.

There was slight divergent strabismus in this eye. No reaction of pupil to a strong light, except in the lower field, and then it was hardly perceptible. It did not react in response to the right pupil contraction. The eye was same size as the right, tension normal. The ophthalmoscope showed media clear, refraction slightly myopic. There was no well defined optic disc, but a deeply cupped, paper-white depression, and from its overhanging upper edge the retinal vessels came climbing out at a sharp angle, as in glaucomatous cupping. A band of exposed scleral tissue extends upwards from these vessels for a short distance, then the normal fundus tissues become sharply outlined, the edge covered with pigment. There is also the appearance of an overhanging arch where the vessels come out, and this extends downward to the right and left, and seems to merge into the retina and choroid. The coloboma expands to the right and left as its edges pass downwards, and it reaches its greatest expansion at 45° downwards from the disc. At this point there is more pigmentation on the edges at the temporal and nasal sides, and small, separate flakes of pigment encroach upon the white field here, and also onto the red grained work. From this point the edges begin to converge, and so continue, when they are lost from the field of vision. Pigmentation extends along the entire border of the coloboma. A few vessels are seen in the white field on the temporal and media side especially. The color of the coloboma is pearl-white, while the disc is more of a dazzling paper-white color. I do not accurately measure the depth of the depression below the normal fundus, because of the dazzling whiteness. I do not find the vessels sharply curved at the edge of the coloboma as in the cupping at the disc. The bright light reflected from my ophthalmoscope mirror was not seen until it had reached a point 45° from above downwards and then but faintly, and increased gradually until in the lower field the moving hand could be seen as a light object. The hand could be diserned in the nasal and temporal field, much better in the latter. The macula region is not marked by any appearance other than is seen in the remaining retinal expansion. The patient's mother says the fissure was seen in the iris soon after birth, and that the infant was disposed to keep this eye closed more than the other, and would cry if this eye was opened. The patient has always experienced pain in this eye in a bright light, and at times she is compelled to close the lids completely. The patient has no other deformity, and is a bright, well-formed young lady.

Judging from the examinations made of a number of these cases of coloboma, I presume there is no true retinal tissue in this white expansion, but that it is more of a connective tissue formation.

Manz once stated his conclusions thus: "The rule is that within the coloboma the retina is completely wanting." Yet, later microscopic studies have shown that retinal elements are found in the coloboma, although in a much modified form, (Haas, Manz, Arlt). The blood vessels in this case do not show any very marked difference in the elevation of the white and red surfaces in the fundus which would indicate that some form of tissue exists in place of the true retinal. If this be so, we can hardly say that there is a true coloboma of the retina.

Much interesting literature exists regarding these fissures at the lower segments of the coats of the globe, as to variety, location, etiology, etc., but in recording this case of very large and unilateral coloboma, there is no occasion to attempt any review of this literature.

The interesting feature of this case is the peculiar coloboma, of which Dr. Swasey furnished a beautiful picture in colors, but our artist failed to get a satisfactory photograph of it and we could not wait for another effort to be made without causing a delay of the issue. We regret the failure, as the omission of the illustration impairs the value of the paper.

J. P. P.

THE SHIELD DRESSING FOR CATARACT EXTRACTION.

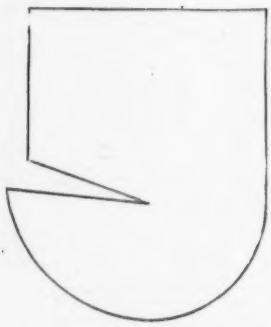
By H. Gifford, M. D.
of Omaha, Neb.

SINCE my first paper on the shield dressing, (*Arch. of Ophth.* XIX, p. 505), a number of devices on the same principle have been described, nearly all of them, I am free to admit, improvements on the form originally proposed by me. The mask of Frothingham, (*Journ. Am. Med. Ass'n*, Aug. 29, 1891), is certainly as safe a dressing as can well be devised; and for the fortunately rare cases where the patient purposely tries to take off his dressing, it is superior to anything that I know. Its elaborateness, however, will tend to prevent its ready adoption. The same applies, to some extent, to the devices of Prout, McCoy, Andrews, and Ring.[1] Not that they are unreasonably complex nor difficult to have made, but when the profession is tolerably well satisfied with what it has, it is very difficult to get it to adopt anything new, which involves extra trouble or expense, even when the new thing can be plainly shown to be of advantage. For this reason, the simplicity of the modification of my original shield which I have been using for several years, may lead some to employ it who, otherwise, might never use any form of shield or mask dressing. It is simply a bit of ordinary, moderately stiff pasteboard $3\frac{1}{4}\times4$ inches, cut in the shape of Fig. 1. This, when bent for the right eye and fastened with a stitch, has the outline of Fig. 2.

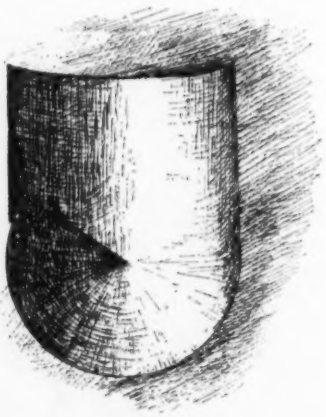
In applying the shield, the edge coming against the nose and cheek is moistened and curved back, and the shield is held firmly in place by a long roller bandage, the first three turns being passed

[1]Since writing the above I have seen a note by Landolt, (*Archives d'Ophthal.*, 1892, p. 656), in which it is stated that the wire mask referred to by Fuchs, in his text-book, (Am. ed., p. 676), was invented in 1883, and was mentioned in the Cincinnati *Lancet* in 1888, p. 518, but on looking the matter up, I can find no trace of a Cincinnati *Lancet* in 1888; while in the Cincinnati *Lancet-Clinic*, in the number referred to, there is no mention of Fuchs' mask; so that while I have no doubt that this mask was in use before my shield, I cannot ascertain whether or not any notice of the former was published previous to my first paper on the subject.

directly around the forehead. It is well to put plenty of cotton under the shield over the forehead and along the side of the nose. The method used to close the eye under the shield can be varied to suit any preference. I use a moist dressing because patients generally prefer it, and because it is the least likely to cause any retention of discharges. A small loose pad of absorbent cotton, wet in boric acid solution, is allowed to settle, by its own weight, on the outer surface of the closed lids; over this, a bit of gutta percha tissue, coming well beyond the edges of the cotton, is applied; over this, enough cotton to cause, when the shield is firmly applied, a barely perceptible pressure on the lids, then the shield and the bandage. When it is desired to leave the lids free from all pressure, except that of a strip of plaster, it is best to pro-



(FIG. 1.)



(FIG. 2.)

tect the inner and lower edges of the shield by fastening a strip of absorbent cotton along them with collodion. I use the shield in this form whenever I desire to protect an eye and still leave the lids perfectly free. I formerly used the strip of plaster dressing under the shield, but have abandoned it because it is apt to get loose and smeary, and where we have no guarantee of the asepticity of the plaster, it is objectionable on other grounds. Moreover, while the natural pressure of the lids is, other things being equal, the best splint for a wounded eye, I have gained the impression that it is easier for the patient to keep the lids and eyeball still if they have a slight support from the outside. This is quite a different thing from the effect of the ordinary pressure bandage;

the latter is liable to interfere with the coaptation of the wound lips, while, when the shield is used, it is impossible to apply the bandage so tightly as to cause undue pressure on the eye unless an unreasonable amount of cotton be put under the shield.

The advantages of some form of shield-dressing are so obvious as hardly to need mentioning. It allows a perfectly firm bandage to be applied without the slightest danger of undue pressure on the eyeball, insuring, at the same time, practically perfect security against external violence. Let me urge any who have never used it to try it in some case where much vitreous has been lost, and see if the sense of security which it gives does not induce them to use it in all cases where there is a large penetrating wound of the eye which needs protection, but which might have the coaptation of its lips interfered with by the pressure of the ordinary bandage.

1404 Farnam Street.

A UNIQUE CASE.

By M. G. Parsons, M. D.,
of Laramie, Wyo.

MR. N., aged 36, a laborer, came to me December 22, 1893, with iritis complicated with phlyctenular keretitis, one large pustule at center of pupil of right eye which soon broke down into an ulcer. He had been troubled at different times with sore eyes for the past six years, which came on while working in the mines, as he thinks, from sudden change from darkness to bright light when there was snow on the ground. The well eye was found to be myopic, the best correction with a sph. —3.25 D. only gave him $\frac{15}{70}$ vision; no astigmatism. The case was very obstinate, the ciliary muscle yielded to mydriatics very reluctantly—pain in the eye very severe, which assumed a neuralgic form of the right side of the head. This was periodical, coming mostly at night. Antiperiodics were resorted to, and pushed which only succeeded in changing the pain from night to day—bowels were constipated—cathartics were used, but no action from the bowels could be had without them. The patient became emaciated, in fact he seemed to be failing at every point, and his patience and courage was rapidly sinking. He was ready to consent to anything which offered in any way relief. He had been troubled with piles to some extent, and the unusual constipation then existing warranted me in making the attempt to relieve him of this troublesome condition. Upon examination the anus was found to be tightly contracted. Without an anesthetic, the sphincter ani was thoroughly stretched, nearly to the point of non-resistance.

Not having the proper instruments with me to determine whether there was stricture of the urethra, was compelled to be satisfied by finding a narrowed meatus, so a succession of sounds was used up to a 22 American scale, which was as large as the meatus would receive. Almost immediately the experiment was crowned with success. His torturing headache, cyclone-like, lulled, and an equilibrium was produced. My patient slept well that night, and the next day had three good free operations of the bowels without medicine. The almost hopeless eye which had been treated after

the usual manner in such cases, began to show the white sclera beneath the firey red, which had resisted all efforts heretofore, the ulcer stopped its ravages, and my patient glided on to a sure and speedy recovery. Was it the long continued eye strain from uncorrected myopia that had produced this condition which had overpowered the nervous system, or was it, as our "orificial?" brothers would tell us, that the trouble was originally of the sensor and motor character, which they tell us are more readily aroused and put to rights by these operations. If so, thanks to the specialist at the other end.

A CASE OF ASTIGMATISM WHERE THE CONTOUR OF THE CORNEÆ INDICATED THE AXES.

By S. Mitchell, M. D.,
OF HORNELLSVILLE, NEW YORK.

OCULIST AND AURIST TO ST. JAMES MERCY HOSPITAL. CONSULTING SURGEON TO THE HORNELL SANITARIUM.

IN these times when the ophthalmologist can equip himself with an endless array of appliances for detecting and measuring astigmatism, (one or two of which are of value, and the rest worthless), no one would hardly think of making a diagnosis of astigmatism in a given case, by means of a simple inspection of the corneæ, unaided by any instrument, yet I was able to do this recently in a patient of mine.

The case was an old gentleman, 63 years of age, a farmer by occupation. He did not complain of his poor vision, but yielding to the urgent entreaties of his son, he had finally consented to consult an "eye doctor," after having tried to obtain glasses from several different spectacle peddlers.

His vision was $\frac{20}{200}$ with either eye, and J. 3 was read fluently. Upon looking at his corneæ, I discovered that their contour did not appear perfectly round, but they were both elongated nearly in their vertical meridian; in fact, they were both shaped similar to an egg with the smaller end pointing upward and slightly inward towards the nose, so that the right inclined at an angle of about 75°, and the left at 105°.

The measurements with the ophthalmometer were O. D. 10. D. axis 165°, O. S. 9. D. axis 30°.

By retinoscopy, (using the concave mirror), the shadow in the right eye moved across the cornea *with* the mirror at an angle of 165° while in the meridian at right angles to this, there was no movement of the shadow.

Different minus lenses brought before the eye by means of retinoscopy disk, did not reverse the movement of the shadow until — 10. D. was reached, In the left the movement of the shadow was also with the mirror at an angle of 20° only, and required a — 9. D. lens to reverse it.

It is almost needless to remark that spherical lenses did not improve the vision; but with — 9. D. cyl. axis 75° over the right eye and — 8. D. cyl. axis 105° over the left, vision was $\frac{20}{40}$ with either eye, and J. 3 could be read quite easily.

The above glasses were prescribed, and he has worn them with great comfort ever since. It is a common experience with all who use the ophthalmometer to meet with cases where the first glance at the patient's corneæ, when the eye is in position for examination, reveals, as in an imperfect mirror, a distorted image of the white band and black figures that compose the border of the disk of the instrument, and a diagnosis of astigmatism is made before we have looked through the telescope or moved the ocular, and we only need to proceed with the examination in order to ascertain the axis and amount of the error.

Such cases are so plain that he, who is so fortunate as to possess an ophthalmometer, may read off the error of refraction from the patient's corneæ as easily as he would from the pages of a book. But it isn't every day that we meet with a case where the guilty corneæ point out their own short-comings, with such unerring precision that "all who run may read," and "the way-faring man, though a spectacle vender, with "Dr." tacked on the front end of his name, *need* not have erred therein."

Having spoken of the ophthalmometer, I would like to claim the privilege that so many have availed themselves of during the past few years, and say a word in regard to this unique instrument. Two years ago I made a pilgrimage to the metropolis for no other purpose than to learn of this instrument, and that from the lips of its champion. His voice was even more eloquent than his writings, consequently when I returned to my native heath, "Ophthalmometre, Javal and Schiötz, No. 304, (Modele de 1889)," found a welcome and permanent abiding place in a large bay-window in my office, constructed especially for it and where, by means of natural light only, it has been in use ever since.

My expectations of its helpfulness has, in these short two years, been more than realized. I did not expect it to do all of my refraction work while I sat idly by and turned the crank, and the employment of a mydriatic, in such cases, to be a thing unthought of. I still employ atropine or homatropine in refraction work whenever their use is indicated.

The fact that it does over-estimate in low degrees of astigmatism, and under-estimate in high degrees, or that it does not record at all .75 D. or 1. D. of astigmatism that may exist *against* the

rule, I do not consider adequate reasons for relegating this truly scientific instrument to the lumber-room. All should be aware, by this time, of these short-comings of the instrument, and to be fore-warned is with the physician to be fore-armed. If the gun of the marksman habitually carries to the right or left, due allowance is made for these slight discrepancies until a more accurate weapon can be procured, and the bull's-eye is punctured just the same.

Perhaps I have more patience with the instrument than some, because retinoscopy is as great a favorite with me as ever, (in fact, it occupies a position, in my estimation, superior to the ophthalmometer), and errors that the instrument fails to notice, are, by this simple method, revealed. And that too, in all their true significance when practiced by the aid of a mydriatic.

THE CONSERVATIVE TREATMENT OF MUSCULAR INSUFFICIENCIES.

By F. C. Heath, A. M., M. D.,
OF INDIANAPOLIS, IND.

TO those desiring to avoid either extreme—the radicalism of Stevens or the ultra-conservatism of Roosa—on this vexed question, a few reasons for what we may call moderately conservative treatment may not seem amiss.

I. The eye muscles are variable in their strength from day to day.

This depends largely upon the general condition and habits, insufficient or excessive exercise, lack of sleep, sexual excesses, use or non-use of glasses, etc. One of my cases showed, January 9, one degree of esophoria and the same amount of left hyperphoria; a month later there was complete orthophoria. Another had, December 14, two degrees of exophoria; February 11, equilibrium; March 18, one-half a degree of esophoria.

Snipping the muscles in such cases might produce or increase the very troubles said to be due to muscular insufficiencies.

II. Our diagnosis may be wrong.

A coincidence may be mistaken for cause and effect, symptoms due to some other cause being attributed to the insufficiency discovered. To illustrate: A physician came to me in January, 1893, complaining of vertigo or dizziness, peculiar feeling in the head, difficulty in concentration of mind, etc—the very picture of muscular insufficiency as given by Seguin, Hotz and others. Examination revealed one degree of left hyperphoria, which was corrected by one-half degree prism, base down, for the right eye, and the same reversed for the left, combined with the spherocylinders previously prescribed for his refractive error. After one month's use there was equilibrium of the muscles, but no relief of symptoms. Impacted cerumen and otitis externa of right ear were next treated as the possible source of the symptoms, but dizziness persisted after complete recovery from these conditions.

A functional heart affection was determined upon later, (partly by exclusion), as the possible cause of all the trouble. How serious an error tenotomy of the ocular muscles would have been in this case!

III. Somewhat akin to the preceding is the difficulty in deciding which is the cause and which the effect in some cases of nervous prostration with insufficiency of one or more eye muscles—there is reason to believe that the insufficiency is quite as often the effect as the cause of the neurosthenia.

IV. Moreover, some patients are neurotic by birth, as Roosa says, and never can be cured. Palliation is all they can ever expect. When we recognize cases as almost certainly of this class, radical treatment becomes hardly justifiable.

V. We should first thoroughly understand the effect of refractive errors and their correction.

As errors of refraction frequently cause muscular insufficiencies, correction of the former will often relieve symptoms due to the latter. Many cases like the following illustrate this:

Mr. D., a sufferer from headache, was found to have astigmatism and exophoria, corrected astigmatism only. After two months reports entire relief. The presumption in such cases is that the insufficiencies disappear after removal of the cause, but this cannot be proven owing to the impossibility of getting an examination at the time relief was reported.

Some cases show that symptoms usually attributed to insufficiencies are really due to the refractive errors, glasses correcting the astigmatism, and hypermetropia causing symptoms to disappear while the muscular insufficiency is unchanged.

To illustrate: Miss H. complained of dizziness, and neuralgia in eyes, temples and back of head. Found and corrected astigmatism as follows: R. E., + 1.50 D. cyl. ax. 100°; L. E., + 1.50 D. cyl. ax. 80°. One-half degree of hyperphoria, and two degrees of exophoria for distance, eight for near point, were found but not corrected. Four months later the dizziness and neuralgia had disappeared, but the insufficiency remained the same.

VI. Regulating the *effect* of an operation is difficult, if not impossible.

This may be too much, too little, or none at all. Roosa speaks of patients with diplopia produced by tenotomy. In the only one of Ranney's cases fully recorded, the muscles, some weeks after the operation, show the same strength as before.

VII. Results reported by operators are often due to other things than the operation.

The glasses prescribed in most of these cases may deserve credit for much of the benefit reported. In other cases it may be merely *suggestion*, as Davis shows of one of Ranney's cases, probably a case of hysteria.

VIII. Some cases show weakness of *all* the muscles.

Obviously, operation is then not to be thought of.

IX. Simple measures relieve many cases.

The results of correcting refractive errors have already been referred to. A ten days' hunting trip benefitted one of my cases very much. Prisms often give satisfaction. Two cases will suffice to illustrate this:

Case I. Mr. T. Reading and theater going cause bad feeling in eyes and head. Subject to "bilious headache." No manifest error of refraction, but two degrees of exophoria for distance and five for near point. Two degree prisms, base in, for reading gave entire relief.

Case II. Miss P. Pain in head, especially back of head and neck. Found astigmatism and five degrees esophoria; ordered for each eye + 1.50 D. cyl. axis 90° with prism two degrees, base out. They have given perfect satisfaction for over a year.

Some cases are relieved by exercising the muscles regularly. Savage's method has not proven so satisfactory in my hands as some others. Gould's plan, given in the ANNALS for January, 1894, promises well. My best results, so far, have been with Dyer's method. One case shows the efficiency of this so well that it deserves a place here:

Mrs. M. Troubled with frequent dizziness, drawing feeling in eyes, etc. Had one spell of "falling unconscious." Had exophoria and slight astigmatism. One oculist had performed four tenotomies (probably graduated), on her externi without improvement. Small doses of strychnia, with prism practice two or three times a week for two months, and weak cylinders correcting the astigmatism, effected a practical cure, the insufficiency almost entirely disappearing, and no disagreeable symptoms remaining except occasional spots before the eyes.

In this plea for conservatism, I hope to be not misunderstood as claiming that operative treatment in muscular insufficiencies is never advisable, but that it should be resorted to only in persistent cases, not hopelessly neurotic, with diagnosis reasonably certain, with due regard to above considerations, and after the more conservative measures have been tried and found wanting.

A CASE OF OTITIC BRAIN ABSCESS. OPERATION. RECOVERY.

By Charles Henry Burnett, M. D.

AURAL SURGEON, PRESBYTERIAN HOSPITAL, ETC., PHILADELPHIA.[1]

MARTHA CREECH, aged 16, a weaver, was brought by her mother November 23, 1893, to the out-patient department for diseases of the ear, nose and throat, in the Presbyterian hospital.

It was then stated that the patient was attacked with pain in and behind her *right* ear about November 10, and that there had been shooting pains across her head, probably due to an attack of grippe with which, in my opinion, she was still suffering, when brought to the hospital. On the evening of November 23, the patient had experienced sudden relief from all pain in her ear and head, and was able to sleep for the first time in two weeks. She felt well on rising on the morning of November 24, and continued so until 9 a. m., when she suddenly began to vomit, and, according to her mother, showed a slight fixation of her eyes and apparently was unconscious for a few moments. From that time, until her admission to the hospital, five or six hours later, the patient suffered with violent frontal headache, worse over the *left* eye.

The girl was admitted to the hospital ward as an ear-patient under the care of the writer, November 24. Her temperature at this time was $102\frac{2}{5}^{\circ}$ F. Respiration 30; pulse 108. Tongue furred and white, expression of face dull and apathetic; she answered questions slowly, and complained of severe pain over left eye only. There was a purulent discharge from *both ears* which has been chronic for years, but no cause was assigned for its origin. Temperature ranged from 101.2° on the 24th to 103° on the 25th, falling to normal on the 26th, then rising again to 101.6° on the 28th. It then fell slowly to 98° on the 29th, then rose to 99.8° on the same day when it again began to fall, reaching 97° by December 1. The temperature remained then subnormal, reaching 96° on December 5. On December 3, patient vomited without relation to ingestion of food. By December 6, temperature rose to 99°, falling the same day to 97.6°. On the 8th and 9th temperature ranged between 98.4° (5 a. m.) to 97.8° (4 p. m.) On December 15, the temperature was 97° at 11:20 p. m. when the patient had a convulsion. The pulse was sometimes subnormal when the temperature was subnormal.

As the subnormal pulse and temperature manifested themselves with increasing pain in the vertex and occiput, the presence of a cerebral abscess was diagnosed. Accurate localization of the abscess was not possible as the headache was in the median line; the

[1] Read in the Section on Otology and Laryngology of the College of Physicians, of Philadelphia, February 6, 1894.

pupils were equally dilated and dilatable, and there were no motor symptoms to guide in diagnosis of central disorder. The presence of chronic otorrhea in both ears also forbade a definite conclusion that the abscess was upon the right side rather than upon the left, although there had been some pain in the right ear before the patient was admitted to the hospital, probably due to a dissecting abscess the size of an almond kernel, upon the posterior wall of the auditory canal which was opened after her admission to the hospital ward.

After the convulsion on December 9, at 11:20 p. m., there was extreme flexion of the left arm over the chest, and increased knee-jerk and some ankle-clonus on the left side. At this time the right pupil was extremely dilated and immobile. At intervals the spasm of the left arm would relax. The respiration was of the Cheyne-Stokes type. At 12:33 a. m. December 15, about an hour after the onset of the convulsions, the pulse was 120 and the temperature 97° F. The reflexes were completely absent, excepting in the conjunctiva, and the patient entirely comatose.

Operation. The resident physician had been directed to call upon the general surgeon on duty whenever the symptoms in this case should seem to demand an operation upon the cranium for relief. Consequently Dr. DeForest Willard was summoned and proceded to trephine the skull about an hour after the convulsions began. The operation was begun without ether, owing to profound unconsciousness of the patient. Dr. Willard began with the intention of opening the mastoid and antrum cavities, but the density of the mastoid and the slowness in the operation it necessitated, together with the alarming condition of the patient induced him to abandon the intention and proceed at once to trephining the cranial wall, which he did, one and one-fourth inches behind the external auditory meatus, and one and one-fourth inches above Reid's base line, removing a button one inch in diameter. The abscess cavity was found near the surface in the substance of the temporo-sphenoidal lobe and slightly above the trephining opening. There was some hemorrhage from the lateral sinus, and about f℥iiiss of exceedingly fœted greenish pus escaped from the opened abscess. At once the right pupil began to contract. The abscess-cavity was then washed out with a warm solution of boric acid. As this solution was injected into the abscess-cavity the right pupil again dilated, and when the fluid escaped the pupil again contracted. The hemorrhage from the lateral sinus was checked by an iodoform gauze packing. A drainage tube was

then put into the abscess cavity and packed around with iodoform gauze. The external ear was occluded with sterlized cotton, and then a sterilized dressing placed over all.

The condition of the patient, during the operation, before the pus escaped from the brain, was very bad. Her pulse once reached 184, but as soon as the pus was liberated the patient's condition improved greatly. The operation lasted nearly an hour, after which the temperature was found to be 99.6° F., pulse 130 and respiration 28; pain in her head ceased and the pupils reacted normally. From the evening of November 10, until December 25, the patient's temperature was mostly *subnormal*, being normal once, viz: December 22. On December 5, it was as low as 96° F., and on December 21 and 23, it was 98.8° and 99° respectively. The pulse varied with the temperature from 68 to 80. On December 25, the temperature became normal and remained so.

The drainage tube was removed on December 16; no discharge from abscess cavity; still considerable discharge from the right ear, and some from the left ear. The packing was removed from the lateral sinus; no hemorrhage.

December 20. General condition excellent; appetite good; no pain in the head.

December 31. Has gained considerably in weight; intellect has improved; much less discharge from the right ear.

January 10, 1894. Patient still improving; pupils and movements of eye balls normal; has not menstruated since her admission to the hospital.

January 20. General condition very good; opening back of ear almost entirely closed.

February 3. There is a copious, creamy, purulent discharge from both meatuses. No vestige of membrana tympani or ossicles discernible in the right tympanic cavity. No bare bone felt. There is some cholesteatomatous matter in the right tympanic cavity. The patient hears entirely with the left ear.

From the absence of any sign of bone lesion (denudation or necrosis), in the drum cavity or mastoid, and from the rapid and entire recovery from the brain abscess, we may conclude that the latter was embolic in origin. The attack of grippe from which the patient apparently suffered early in November, set up an acute inflammation in the chronically congested drum-cavity, and septic matter was probably conveyed by an enlarged vessel to the brain-substance resulting in the abscess in that structure.

127 South Eighteenth Street.

ON THE PROPRIETY OF USING STIMULANTS, TONICS, AND INCREASED NUTRITION IN RELIEVING THE PAIN OF ACUTE OTITIS MEDIA.

By Oren D. Pomeroy, M. D.
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IN acute suppurative or catarrhal otitis, the pain is often intense, and likely to continue for some days unless relieved, thereby interrupting the patient's sleep and nutrition, and, after a time, reducing his strength so that he presents a most demoralized and woebegone appearance. This may sometimes occur in spite of previous leechings, applications of dry or moist warmth to the ear, aural douche, or even the internal administration of narcotics. In certain cases I have seen the leech, which is usually so valuable, add to the distress of the patient, and the other remedies already mentioned seem to act quite the opposite to what is usually expected of them. I conclude that the prolonged pain, the disturbance to sleep, and the interrupted nutrition have contributed to bring about a new condition—that of more or less profound depression on which the continued pain may largely depend—in other words, a neurotic condition similar to that obtaining in painful or neuralgic conditions gradually.

I am inclined more and more to the opinion that pain in general, not dependent on a positively inflammatory condition, is likely to depend on a depressed systemic state, requiring for its management rest, or stimulants, or tonics, or food, or all these combined. Perhaps an inflammed ear would be the last thing to be thought of as being amenable to such treatment, but for some years I have felt more and more that the general condition of the patient was worthy of careful attention, and have found that rest, stimulants, tonics and improved nutrition were often essential to the patient's recovery. Recently a striking example of these truths occurred.

A gentleman, of about 60, had an attack of suppurative otitis media of his right ear. Two physicians, one of whom was his son were in attendance. He progressed fairly well for ten days or two weeks, when his physicians found that leeching seemed to aggravate the pain and that morphine acted unsatisfactorily, as well as

the other remedies. I was called in with the idea of operative interference, and after observing the case, concluded that the element of depression largely predominated and had much to do with the painful condition, although his temperature was 99½°. The ear was freely suppurating and the perforation whistle was easily elicited. The perforation was in the anterior inferior portion of the membrana. Some of the time there seemed to be tenderness over the mastoid, but after repeated tests I concluded there was none. The pain radiated over the side and back of the head, and also extended into the neck.

His son remarked that he had previously had pain in the occiput and neck when he was not in his usual good health or was eating badly. All these symptoms, with his cold extremities, pale, cool face, and generally neurotic condition, induced me to order rum or brandy sufficient to relieve his sufferings, only stopping short of the physiological effect. Jamaica rum was freely administered, and on a subsequent visit, six hours later, the patient was found completely relieved from pain.

Large doses of cinchonidine, even to the physiological effect, was ordered together with active exhibition of nutritives. He progressed satisfactorily for about ten days, when I was again called in.

A similar condition to the former state was observed, I suspect from relaxation of the treatment recommended, and I repeated the former instructions. The patient was again promptly relieved; the ear was still discharging, for which peroxide of hydrogen was ordered. It will be noted here that the elevated temperature was brought to the normal by the exhibition of stimulants, the cinchonidine not being used in the first instance. One indication for the use of alcoholic stimulants in some of these cases is the tolerance of the patients to its action; much may be taken without producing the physiological effect.

Some time since I had occasion to prescribe for a physician who had a suppurative otitis of ten days duration. There had been considerable pain, and the patient showed signs of his suffering in his facial expression, and in a general way the depressing effects of the disease was apparent. The ear was freely suppurating. I gave him to distinctly understand that the first step in his cure was to restore the energy lost by suffering from the disease, and the interrupted nutrition by the use of alcoholic stimulants pushed to a near approach to the physiological effects, also accompanied by tonics and as much food as he could comfortably digest.

He left me with an amused smile, provided himself with the necessary stimulants, and inviting a near friend to assist, proceeded to carry out the instructions.

After a time the friend was somewhat overcome from his somewhat excessive potations, but the patient who had taken an equal amount was much improved in every way, without the slightest approach to inebriation. He dated his rapid recovery from this successful starting point.

Some years ago I was called in consultation with two other medical men in the case of a lady, aged 50, who had an acute catarrhal otitis media accompanied by considerable pain. One of the doctors present thought there was mastoid tenderness and was in favor of operating. The other physician and myself opposed this notion, each believing that the pain in the ear and side of the head was rather neuralgic than inflammatory in character, and advised large doses of cinchonidine (10 grs. every three hours). Alcohol was interdicted as the patient was inclined to the abuse of stimulants. The pain was quickly and permanently relieved.

Nourishment was naturally looked after. I could adduce a large number of such cases to illustrate the matter under discussion.

Recently at the New York Polyclinic I had a patient with a sharp attack of catarrhal otitis media. The usual remedies such as leeches, hot applications, etc., were prescribed, I remarking that as the patient seemed robust, that alcoholics would not be necessary.

The patient naturally overheard the observation.

A few days subsequently, she informed me that failing to get relief from the means I had suggested, she had tried whisky and abundantly succeeded in being freed from pain. These considerations remind me of certain practices in the West—when a patient is suffering from malaria with neuralgic symptoms and fails to get on with the usual routine treatment, it is sometimes the practice to saturate them with whisky, when the patient suddenly takes a fresh start in the direction of recovery.

A few years since a medical man in New York, editor of a leading medical journal, was attacked by an otitis, for which a great variety of means were used, including a mastoid operation, without relief.

On consultation with a gentleman devoted to general medicine, the question was raised that the patient had, for a long time, been overworked, and the prolonged suffering had so reduced his energies that a genuine neurotic condition existed, for which whisky was recommended.

On the first day a full bottle was administered, followed up with a sufficiency to maintain the effect, and he was speedily cured of prolonged and painful otalgic symptoms.

ALARMING SECONDARY HEMORRHAGE FOLLOWING THE REMOVAL OF HYPERTROPHIC TONSILS WITH THE GALVANO-CAUTERY SNARE.

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THE oft agitated subject of tonsillar hemorrhage was vividly brought to my immediate attention in the case which I herewith report. After hearing and reading the opinions of authorities, who extol the galvano-cautery as the only safe method for the extirpation of enlarged tonsils, one naturally hesitates to bring simpler and more rapid means into service, though personal experience with same has not been marred by serious consequences.

Fully appreciating the safety which lies in the cautery as a valuable hemostatic, the following history acquaints us with the knowledge that alarming bleeding may occur after its application, though the usual symptoms of pain, swelling and inflammation have subsided. The special feature in this instance is the appearance of hemorrhage five days after the removal of the tonsils, when the condition of the throat warranted a discontinuance of further attention. I quote the history of the case in detail, trusting it may prove of some interest:

Mr. C., a medical student, aged 21, presented himself at my office January 29, 1894. He desired an opinion as to whether his enlarged tonsils could be removed with safety. For fifteen years he has had repeated attacks of follicular tonsillitis. In the winter he would have a sore throat every week, but during the milder seasons these were only experienced on exposure to a moist atmosphere. Whenever the trouble would manifest itself, both tonsils would swell to such a size as to meet in the median line, squeezing the uvula between them. This condition was so annoying, that a physician in attendance advised the amputation of the uvula. The pain during the acute condition was severe. The tonsillitis was never unilateral. It would last about seven or eight days; the swelling of the tonsils would then diminish, but not to a comfortable degree. During the inflammatory stage, Mr. C. was unable to swallow solid food; not on account of the pain, but owing to the immense masses almost completely closing the faucial space. He existed on a milk diet throughout these exacerbations. Even

during the absence of acute symptoms, the patient experienced considerable difficulty in deglutition, as these enormous tonsils prevented the passage of food into the lower pharynx, unless masticated into a fine pulp. Mr. C. stated that he was the last to leave the table, because he had to so thoroughly chew his food for fear of choking.

Nasal respiration was found to be obstructed during non-inflammatory periods. When the acute trouble appeared, he had to sit up in bed to breathe. He has been awakened from sleep in one of these attacks with a suffocative seizure, and had to leave his bed to get air.

On examining the young man's throat, was astonished to find such immense growths existing in an individual's fauces for fifteen years, without some radical attempt having been made for their reduction. No active inflammatory signs were then visible, but the tonsils almost touched each other. They moved backward and forward on forced respiration, as if on pedicles. The uvula was pushed to the right by the left tonsil, which was the largest hypertrophy I have ever seen. The right tonsil was about two-thirds the size of the left one. The chink between the growths was certainly not over a fourth of an inch in width.

Personally, I have never had a serious hemorrhage, either in a child or adult, following extirpation of the tonsil with the cold instrument, but this overgrowth of tissue presented so formidable an aspect, I advised their removal by means of the galvano-cautery snare, to avoid the possibility of secondary bleeding.

A week later, February 5, 1894, Mr. C. returned, and in the presence of two fellow-students, had both tonsils excised under cocaine. The operation was not difficult; both growths being easily surrounded by the snare. No bleeding followed the incision of the cherry-heated wire. The left tonsil after its removal was as large (to use the patient's words), as a good-sized chestnut burr. Mr. C. was startled on seeing its proportions. A solution of boric acid was prescribed to be used as a gargle, together with pieces of cracked ice and the usual liquid diet. The same evening he had considerable pain. I saw him the next day and found marked edema of the anterior and posterior palatine pillars, left side, together with the same condition of the uvula, which had adhered to the posterior pillar. The right side of the throat was inflamed, but not edematous. He had been sucking ice, and it gave him some relief. As expected, the eschars were extensive, and to guard against infection ordered a solution of bichloride of mercury in hydrogen peroxide, fifteen volumes, to be sprayed into the mouth every fifteen minutes. This combination acted very kindly both to the constant pain, and in easing the act of swallowing. Three days later, Thursday, February 8, the edema had almost entirely disappeared, and the uvula returned to its normal position. On Friday, February 9th, finding the throat healing so nicely did not think it necessary to again visit my patient, so informed Mr. C. to present himself at the office in a day or two.

Was surprised to receive word on Saturday morning, February 10th, that he had an alarming hemorrhage during the night. On my arrival found patient in bed, (he was only confined to his room before this), with an exsanguinated countenance. His pulse was rapid, regular, but weak. He informed me in muffled tones, that just before retiring, about 11 o'clock Friday night, he noticed a slight bloody discoloration of his sputa. There

was also some pain in the left ear but it was not severe. While in bed he expectorated a number of times, but the sputa was again clear, and therefore did not give him any cause for worriment. About 1 o'clock a. m., he was awakened with an agonizing pain in the left ear and a flow of blood into the throat almost choked him. Sucking pieces of ice failed to arrest the bleeding, but so intensified the auricular pain that he could not hold any ice in his mouth. Hot water douching did not relieve the excruciating pain in the ear. The hemorrhage from the left tonsil, evidently due to the loosening of the eschar, lasted for fully five hours, and was finally controlled by a spray of cocaine, four per cent, used by Dr. Stone, who was hurriedly summoned. Two hours later the bleeding recurred and continued for four hours. I arrived at the cessation of the second hemorrhage, and found that a very large clot had formed. The cocaine spray had again checked the bleeding.

The entire left faucial space was filled with the clot, which further extended beyond the median line, midway between the uvula and right palatine pillars. It also reached into the lower pharynx, causing great discomfort. Mr. C. attempted to swallow water, but it would not "go down" as he expressed it, showing the area the clot occupied. He did nor take any nourishment for twenty-four hours, fearing to dislodge the clot and reexcite the bleeding. The hydrogen peroxide spray was continued every fifteen minutes. Its peculiar properties aided materially in loosening the large clot, which came away easily Saturday evening about 6 o'clock. Slight oozing of blood followed but it was promptly stopped by a spray of an alum solution, a drachm to the ounce. Mr. C. was then able to take liquid nourishment. Half a glass of milk with a teaspoonful of whisky was taken through a glass tube, the latter being placed to the right side of the fauces, so as to avoid disturbing another clot which had formed. (This procedure was accomplished in my absence, following the original routine). The liquid was swallowed successfully without any further bleeding. The fluid diet was continued until the following Tuesday.

On Wednesday morning, February 14th, Mr. C. was able to come to the office. The wounds had healed pleasantly. Slight soreness still existed in the pharynx, but no pain manifested itself during the act of swallowing. His voice which before the operation was characteristically muffled, was now clear and resonant. This improvement was noticeable to the patient. He volunteered the information that his sleep the last two nights was the most refreshing he has enjoyed since early childhood.

At the time of his distressing aural pain, the tympanic membrane was inspected, but I could find no evidences of an acute inflammatory condition. Whenever the inspired air would strike a certain spot in the left side of the throat, the pain in the ear would be severe. The cocaine solution when sprayed on the part would bring immediate relief, showing that some filament of the glosso-pharyngeal nerve was exposed.

The unusual secondary manifestations in my case impress the necessity of carefully observing the after-effects of the galvano-cautery, and do not warrant scouting the possibility of hemorrhage after its use.

1029 Park Avenue.

A CASE OF TORTICOLLIS FOLLOWING REMOVAL OF ADENOIDS OF THE RHINO-PHARYNX, WITH REMARKS ON NASAL REFLEXES.[1]

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IT seems almost necessary to apologize for again referring to a topic so threadbare as that of nasal reflexes. My excuse for so doing is the recent occurrence in my own experience of an instance of reflex disturbance which I believe to be rather uncommon and of unusual interest. In these days of rhinological enthusiasm we should not be surprised to find that almost every possible functional derangement has been at one time or another attributed to an intra-nasal lesion. After sifting out the genuine cases from those which are the product of illogical inference, we have a list of considerable length, containing certain examples which are easily recognized, and are of frequent occurrence. Among these may be mentioned bronchial asthma associated with nasal polypi. Yet we shall probably find it difficult to follow certain modern observers to their conclusion, that all or even a large proportion of cases of asthma are due to some deformity or disease of the nasal fossæ. As an illustration of the extreme to which the human mind may be led in pursuit of a theory, witness some of the extraordinary cases quoted by Hack in his well-known papers on nasal reflexes. Gastralgia and dyspepsia, cardiac palpitation, salivation, scotoma, agoraphobia, exophthalmic goitre are among those enumerated. Other observers have reported cases of chorea and epilepsy, of nocturnal enuresis, and of neurasthenia, one writer asserting of the last mentioned disease, that he has not seen a single case of it without co-existing catarrhal trouble. This last statement loses a little of its startling character in view of the pre-

[1] Read before the Neurological Section of the Academy of Medicine, February 16, 1894.

valence of catarrhal disease in this climate. A case of glaucoma, not relieved by iridectomy, is reported to have been cured by removal of a nasal polyp, and rheumatic muscular pains are said to be not infrequently dependent upon nasal disorders. Thus far the present popular "fad"—appendicitis—has, I believe, escaped the soft impeachment. While intra-nasal lesions have been accused of promoting all sorts of disorder, the rhino-pharynx has not been altogether exempt from suspicion, and the number of authentic cases of rhino-pharyngeal reflex has become quite large.

Cases of hysterical aphonia, in which the voice was promptly restored by cauterization of the posterior ends of the inferior turbinated bodies, have frequently occurred in my own experience and in that of others, and may, perhaps, be included in this category, since in its enlarged condition, the end of the inferior turbinated is an occupant of the upper pharynx. It must, however, be admitted that in cases of this class almost any profound impression upon the nervous system would be likely to accomplish a similar result. A more appropriate example of true rhino-pharyngeal reflex is to be found in a case like that reported by Casselberry, (*Trans. Am. Laryngol. Ass'n.*, Vol. xv, 1893, p. 9), of laryngeal spasm excited by the application of a strong spray to the vault of the pharynx of a girl, fifteen years old, with enlarged faucial and pharyngeal tonsils. On a subsequent occasion, the passage of a probe into the rhino-pharynx induced a spasm so violent and prolonged that unconsciousness supervened, and tracheotomy was contemplated. A curious fact in connection with this case is that removal of the adenoids was effected under cocaine without apparently producing a spasm.

According to Bosworth, adenoids in the vault of the pharynx may become, "in rare cases," a source of reflex symptoms, and, in a paper on "Chorea minor from naso-pharyngeal reflex," (*Am. Jour. Med. Sci.*, April, 1886, p. 517), Jacobi gives a graphic picture of lymphoid hypertrophy in the vault of the pharynx as an exciting cause of various muscular anomalies.

Tornwaldt, of Danzig, in his well-known thesis on the "Bursa pharyngea," refers to reflex cough as a symptom of hypersecretion or of cystic degeneration of the bursa. In his monograph on "Hyperplasia of the pharyngeal tonsil," Trautmann, of Berlin, gives especial attention to the reflex symptoms associated with this condition, of which he cites numerous interesting examples. Several cases of reflex cough have been reported by Hering, of Warsaw, (*Rev. mens. de larynologie*, April, 1886. p. 177). In

one of these torticollis and painful spasm of the muscles of the neck succeeded immediately upon electric cauterization of the pharyngeal wall. The muscular disturbance persisted for nine days, and ceased only with the cicatrization of the wounds. A neuritis resulting from irritation of a nerve filament in the neighborhood of a cauterized point is thought to have provoked the reflex phenomena. It should be noticed that in this case the traumatism was inflicted upon the pharyngeal wall rather than in the vault of the pharynx. A case of spasm of the glottis with dyspnœa from chronic pharyngitis, reported by De Gennaro, (*Arch. Ital de Laringol.*, An. vi, f. 3 and 4), suggests a possible frequent relationship between adenoids and laryngismus in children. A similar observation has been made by Ragoneau and by Coupard. I have myself operated upon a little girl, the child of a physician, who was subject to frequent and alarming attacks of glottic spasm, especially when excited. Since the adenotomy, more than two years ago, there have been only two attacks, and those were of moderate severity. In his elaborate paper on the "Hysterogenic zones of the upper air passages," Lichtwitz, (*Rev. mens. de laryngol.*, Dec., 1886) refers to a case in which the posterior surface of the velum was the seat of what he calls a "lethargogenic zone." He gives records in all of six cases exhibiting an interesting variety of reflex phenomena. Three remarkable cases have been reported by Netchaieff, of Moscow, (*Abstr. in Jour. of Laryngol., etc.*, March, 1889). In one, the right middle turbinated was enlarged, and a papilloma the size of a cherry stone, lay between the left Eustachian orifice and the choana. The patient had aphasic symptoms followed by numbness, pricking and spasmodic twitchings of the right hand and right side of face. All disappeared when the morbid conditions in the nose and rhino-pharynx had been remedied. The second case was one of œsophagismus, associated with dyspnœa, in which the right inferior turbinated was hypertrophied, and the corresponding half of the posterior wall of the pharynx was thickened. Relief followed the use of the galvano-cautery. Both of these cases were adult males. In the third case, that of a lady, subject to attacks of dyspnœa, palpitation, headache and giddiness, a cure resulted from two applications of chromic acid to an enlarged right inferior turbinated. In a paper read before the Am. Laryngological Association in 1889, (*Trans. Am. Laryngol. Ass'n.*, Vol. xli, p. 43), J. N. Mackenzie expresses the opinion that the nasal pharynx, in quite a large pro-

portion of individuals, is exceedingly sensitive to reflex-producing stimulation and that the areas chiefly involved are the posterior ends of the turbinated bodies, and the upper and posterior portions of the cavity. Not to detain you with numerous references to the literature of the subject, suffice it to say that all authorities who take any notice of the matter concur in the opinion that adenoid hypertrophies in the vault of the pharynx may be the exciting cause of reflex disturbances in the larynx and elsewhere. I may add that a pretty thorough search has failed to discover on record a case precisely identical with the one about to be narrated, and it is the first of its kind occurring in my own observation. But few writers on this subject refer to such a complication as a possibility.

The following case came to my clinic at the Manhattan Eye and Ear Hospital in the Spring of 1893, giving a typical history of adenoids in the rhino-pharynx and presenting the characteristic physiognomy.

The case will be reported in detail by Dr. McKernon in the forthcoming volume of Transactions of the Hospital:

The patient was a girl, aged 9, who had been a mouth breather ever since a course of measles, eighteen months before.

She had had frequent attacks of earache and the hearing was decidedly impaired. She was assigned to Dr. McKernon for operation, but the patient disappeared and did not come again to the clinic until last October. At that time her general condition was very bad, but the nasal occlusion was so complete that immediate operation was felt to be imperative. Accordingly she was etherized and three scrapings were done with the Gottstein curette, the first two, of the vault, and the last, of the posterior wall of the pharynx. It is quite certain that no unusual force was exerted. No difficulty was met with in the manipulations, and only an average amount of blood was lost.

Twenty hours after the operation, it was noticed that the patient carried her head with the face turned towards the right shoulder, and it was found that she was unable to move it back.

Forced rotation and flexion of the head were painless, but extension was painful, and a sensitive point was discovered just to the left of the cervical vertebrae. There was no perceptible rigidity of the superficial muscles at the back of the neck, and the anterior cervical muscles were quite flaccid. There was only trifling rise of temperature, but the child looked sick, refused to eat, and was restless at night. She did not complain of spontaneous pain or discomfort in swallowing. The appearance of the pharynx forty-eight hours after operation was peculiar. The mouth being open, the lower limit of the wound, made by the curette, could readily be seen considerably below the plane of the velum. The surface of the wound was foul and sloughy. Its margins were angry and swollen, particularly below and to the right, where there appeared to be a mass of partially everted mucous membrane of lymphoid tissue. During the succeeding twenty-four hours improvement began. In the course of ten days the rigidity of the head, and the traces of the pharyngeal operation disappeared.

In the meantime the transformation in the general appearanc of the child was remarkable. She gained in flesh, and improved in color. Her previous heavy, stupid expression of countenance was replaced by one of brightness and intelligence. Her breathing, hitherto labored and snoring, especially at night, was tranquil, and in speech there was very noticeable increase of vocal resonance. In short, an unhealthy and rather dull child had been converted into one of more than ordinary vigor and attractiveness by the simple process of restoring the nasal respiratory track to its normal condition.

The early post-operative symptoms in the foregoing case were somewhat perplexing, but it gradually became clear that we had to deal with a simple condition of tonic muscular spasm.

The clinical study of reflex neuroses is always attended by more or less difficulty. For example, a case of asthma of fifteen years duration is now under my care, who had very aggravated chronic rhino-pharyngitis and chronic lacunar emygdalitis, the right tonsil being especially large and diseased. This patient was given hydriodic acid internally, and a detergent antiseptic spray for the nose and pharynx. In addition, the tonsil has been partially destroyed with the electric cautery. For the first time in many years she is now getting undisturbed sleep at night, and has had no asthma for several weeks, but up to the present moment I am equally uncertain as to the cause of her asthma and the source of her relief. To further illustrate the confusion to which we are liable, let me refer to a case reported by Harrison Allen of what he calls "paresis of the suspensory apparatus of the hyoid bone of the tongue," in a victim of adenoid hypertrophy and enlarged faucial tonsils, in which the familiar phenomenon of labored and interrupted respiration during sleep is described (*Trans. Am. Laryngol. Ass'n.*, 1886, p. 4). This child had recently suffered from a severe attack of whooping cough which may have had some bearing upon the suffocative attacks. In discussing Dr. Allen's paper, Hooper related a case of chorea developing about two weeks after removal of adenoids under ether, in a child of marked neurotic tendency. The length of the interval may be thought to exclude the idea of an etiological relationship between the operation and the neurotic development.

In order to appreciate more readily the ease with which lesions and pathological conditions of the rhino-pharynx may become the exciting cause of reflex disturbance, let us recall, very briefly, a few points in the anatomical structure and relations of this cavity.

The wall of the pharynx is composed of mucous membrane, a layer of submucous fibrous tissue and various muscles. Its vault is formed by the body of the sphenoid bone and the basilar process of the occipital bone, to which are attached aponeuroses and ten-

dons of several muscles which enter into the construction of the pharyngeal wall and control certain movements of the head. From the pharyngeal spine, midway between the foramen magnum and the anterior margin of the basilar process, spring a few tendinous fibers of the superior constrictor muscle. Just to the outer side of the spine is attached the rectus capitis anticus major muscle, and directly behind it, the rectus minor. The former muscle arises from the tubercles of the transverse processes of the third to the sixth cervical vertebrae inclusive; the latter from the anterior surface of the lateral mass of the atlas and its transverse process. The recti muscles are flexors and rotators of the head. Their nerve supply is derived from the suboccipital and deep internal branches of the cervical plexus, and they are in close relation with the superior cervical ganglion of the sympathetic. The mucous membrane lining the rhino-pharynx is especially rich in blood vessels and lymphatics, and its nerve supply is thus described by Wendt in Ziemssen's Cyclopedia: "The second division of the trigeminus gives branches to the roof of the pharynx and the parts surrounding the Eustachian orifices. The mucous membrane is also supplied by filaments from the glosso-pharyngeus and the vagus, with which fibers from the sympathetic connect." Speculation as to the precise mechanism of reflex neuroses is perhaps profitless, although we may not be fully inclined to agree with a reviewer of Woakes' book on Nasal Polypus, who writes in the *Journal of Laryngology*, March, 1888, imploring "one undoubted experimental proof that these isolated ganglia (e. g. Meckel's, the superior cervical, etc.), possess afferent and efferent nervous systems, and can become centers of reflex action. There is nothing to support such a contention beyond assumption and assertion, and the mischief of it is that those who write most profusely of the disturbances of the "sympathetic system" (that much abused nervous chain), show the slenderest acquaintance with physiology."

On the other hand it is the belief of Mackenzie (*Trans. Am. Laryngol. Ass'n.*, 1886, p. 154), whose contributions to this subject have been numerous and valuable, that "these affections are intimately related to some disturbance of the sympathetic nerves, and probably a deranged condition of the vaso-motor centers themselves."

There seem to be three ways in which the train of symptoms occurring in this case might have been produced. 1. By an actual wound of the rectus muscle. 2. By a contusion of the muscle from extraordinary pressure in curetting. 3. By a lesion of nerve

filaments in the mucous membrane resulting in a reflex irritation of the muscular fibers engaged in rotation of the head.

The first may be at once excluded by the behavior of the wound and by the appearances on completion of repair. The second may be eliminated on the testimony of an experienced and careful operator who disclaims the use of more than ordinary force. One suspicious point in this connection is the localized tenderness to the left of the cervical vertebrae. The third theory seems to give a satisfactory interpretation of the symptoms, especially in view of the evidently neurotic temperament of the patient and the depressed state of the general health. Although the occurrence of torticollis as a sequel of adenotomy is not a very serious matter, it may perhaps be avoided by bearing in mind the fact that as we descend the posterior pharyngeal wall the layer of lymphoid hyperplasia becomes thinner.

We may, therefore, accomplish a radical removal of these so-called vegetations by a relatively superficial use of the forceps or the curette in that situation.

This point also has a bearing upon a method of operating which I have long practiced and recommended in cases in which the lymphoid tissue is found to be distributed at a low level in the pharynx, namely, in ploughing up from below with the nail of the forefinger the adenoid tissue of the posterior wall before the application of instruments.

The use of the finger in this way has a double advantage. We may thus more exactly estimate the degree of force required without going to an excessive depth, and we thereby so accumulate the morbid tissue in the vault of the pharynx as to ensure the extraction of a larger proportion with the first introduction of the forceps.

Finally, although my personal experience is too limited to justify a definite conclusion, the scanty testimony available would seem to indicate that the posterior wall, rather than the vault of the rhino-pharynx, is the site whence these motor disturbances emanate.

20 West Thirty-First Street.

IS LARYNGITIS SICCA AND STOERK'S BLENORRHŒA OF THE LARYNX ONE AND THE SAME DISEASE?[1]

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IN the year 1874, Stoerk described a certain disease of the larynx prevailing in some parts of Austria. In 1880, in his text-book[2] on laryngology, he gave an exhaustive description of it, citing the history of eleven cases. Stoerk pronounces this disease a condition in which the entire mucous membrane, extending from the nose down to the trachea, is changed into a pus secreting surface, causing the formation of crusts in the larynx and trachea. In consequence thereof, there is a tendency of the parts most affected—as the anterior portions of the vocal cords—to form adhesions, and afterwards pure hyperplasia. These parts, protected as they are by the epiglottis and the nodus epiglott. invite putrefaction. For this reason, the same goes on undisturbed and reaches its greatest intensity. Accordingly, stagnation of pus occurs in these places, ulceration and adhesion follows, and finally hyperplasia. This disease is most prevalent in Galicia, Poland, Wallachia and Bessarabia. In these countries, the endemic occurrence of this disease appears to be associated with social quite as well as with telluric and climatic conditions. The largest number of patients thus diseased are those living materially in the midst of poor and filthy conditions, which are found in these countries more than elsewhere.

Since Stoerk's last publication, however, with few exceptions, this subject received but slight attention in writing or discussion.

[1] Read before the Medical Society of the State of New York at its Eighty-Seventh Annual meeting, February 9, 1893.

[2] Carl Stoerk, Klinik der Krankheiten des Kehlkopfes, etc., Stuttgart, 1880.

Having been unsuccessful in finding any American literature whatever, touching this matter, it appeared to me that this disease has remained entirely unknown in this country.

For the past seven years, the material in my department of the German Poliklinik, vast in numbers of people coming from those parts of the world which Stoerk especially mentions, it is surprising to say that I have not as yet met a case of Stoerk's blenorrhœa. For the first time this winter I encountered two cases, one of which answered exactly the symptoms described by Stoerk, while the other, an outspoken case of laryngitis sicca, brought to me the conviction during treatment, that this disease was nothing but an early stage of Stoerk's blenorrhœa. A remarkable feature of the first case was that the woman was born in New York, and that her parents had never been in Poland or Galicia. The case in brief is the following:

Mrs. Annie R., aged 24, was born in the city of New York. Both her parents came from Bavaria, and arrived in America years before her birth. She always lived in the United States, and cannot remember having come in contact with people from Poland or Galicia. She is dressed plain, but neat and clean, and does not impress one as having been reared in unclean surroundings. She is married to a man enjoying perfect health, and has borne one healthy child. She never had any eruption on her body, and always felt well, until she became hoarse four years ago. At that time, she had no pains and no dyspnea. Three years ago, she began to be annoyed by scratching in her throat. Afterwards she began to cough and a slight dyspnea set in. These symptoms have remained permanent, with the exception that they became more severe and that her voice is now entirely aphonic. Her nose felt sore as long as she can remember, and there is a secretion of a fetid and mostly purulent character. The patient is so timid that she postponed consulting a physician until a few weeks ago, and for unknown reasons she left him soon after.

On my first examination, I found the mucous membrane of the nose in a very atrophic condition, with a slight hypertrophy of the middle turbinated body of the right side. There are stinking crusts on both sides, mixed with pus. In the pharynx, the mucous membrane was hard as leather, shining and atrophic. The larynx has the exact appearance as that described by Stoerk. The entire mucous membrane has been transformed into a gray, yellow-greenish surface. At the anterior angle of the vocal cords in particular, a mass of dried greenish pus adheres, the removal of which was not possible without some difficulty. After the larynx had been thoroughly cleansed by means of a powerful spray, in the anterior commissure, a narrow adhesion of the vocal cords became visible. The spray I use in these cases is an exception to my general rule, for I have entirely given up the use of such for ordinary purposes. Posterior to this, and upon the inner surface of the left vocal cord, a small ulceration came to view. The whole vocal cords are thickened. A more marked thickening presents itself below the left vocal cord, and seems to be a true hyperplasia.

The width of the glottis is narrowed, and the voice of the patient is aphonic. In the trachea there are still some stinking crusts, and the anterior wall of it is thickened as far down as one can see. After a very careful examination, phthisis and syphilis are to be excluded.

The second case, which I now cite, is Mrs. Linft P., aged 28. She and both her parents were born in Galicia, and ten months ago immigrated to the United States. She is married ten years, has two living children, and since three months is pregnant again. Three years ago she became hoarse and was treated successfully for three weeks at Jaroslaw, (Galicia). Soon after her throat again troubled her; she felt that everything was drying in her throat, which sensation has never left her since. After her arrival in this country, she visited a dispensary, but soon left unrelieved. Besides her old troubles, six months ago, however, she acquired dyspnea, which in the last few weeks became so alarming that she sometimes thought she would suffocate.

On my first examination, I found an atrophic rhinopharyngitis, nose and pharynx coated with many inspissated crusts. The mucous membrane of the larynx was, to such a degree, atrophic and shining, as is only seen in extreme cases of pharyngitis sicca; the vocal cords throughout their length thickened. On the right arytenoid cartilage was a mass of dried stinking secretion; also below the vocal cords and in the trachea, as far as you could look down, these masses were present. The woman is aphonic and dyspnoic, gasps continually for breath. She lives in one room with her whole family, consisting of six persons, looks, and is dressed extremely dirty. She has not had the benefit of a bath since being in this country, and leaves her room but twice weekly to visit the clinik.

When I sprayed her larynx and trachea with Dobell's solution, in order to examine the patient, she became so dyspnoic that I thought tracheotomy would be the next step. Only after having succeeded in quieting the woman, sufficiently to enable me to remove a piece of secretion from the trachea with a long forceps, did the dyspnea cease. This dried piece was compact, had an exquisite greenish-black color, etc., *i. e.*, the exact appearance of the nasal secretion in ozena. The patient told me that during the following weeks she had several similar attacks of dyspnea.

While the first case, judging from Stoerk's description, represents an undoubted case of blenorrhœa of the larynx, proving at the same time that this disease may occur outside of the Austrian provinces, that it may even appear sporadically in the far away America. The other case suggested the idea that Stoerk's blenorrhœa must be an advanced development of the much more frequent laryngitis sicca.

The second patient's visits to the poliklinik were so irregular during the first weeks, that a course of treatment was at that time out of the question. The secretions in the larynx and trachea increasing caused, besides a permanent strong dyspnea, a very extraordinary irritating cough. In fact, the patient was constantly hawking or coughing. Under such circumstances, superficial

excoriations were formed, and these places already showed the gray-yellow-greenish appearance, so characteristic in blenorrhœa. The patient, after an absence of two weeks, returned, and then I found that the anterior parts of the vocal cords had grown together. It was not more than natural to suppose that if she again absented herself she would develop in a short time a repetition of the picture I gave you of the first case. She remained, however, under my care, and I am now in such a position to be forced to declare candidly that the patient whom I demonstrated before the German Medical Society of New York as a case of laryngitis sicca, is now after five months untiring medical treatment in that state, that to-day I could demonstrate her as an exquisite case of Stoerk's blenorrhœa, if I believed at all in a special existence of such a disease. In this time, the entire picture has so changed. The glottis is reduced to a small half-moon-shaped gap, lying before the two arytenoid cartilages. Out of the adhesion at the anterior angle, which naturally has moved backwards, a true hyperplasia has been found, extending alongside the edges of the vocal cords throughout their entire thickness. The anterior wall of the trachea is also much thickened, which can be seen well especially by translumination, which I had not utilized before. The crusts with their partly pointed, partly blunted edges, loomed upwards in the trachea, that it presented to the mind the characteristic view of stalactites in a filtering stone cavity. (Schmidhuisen).

We therefore see, to voice the sentiments of Virchow, that a chronic, fibrous, retracting inflammation has set in.

The woman is aphonic, at times hoarse, and suffers from a strong dyspnea which, of course, is augmented by her pregnancy. The principal danger threatening the patient arises from the dried crusts in the trachea, and this alone might necessitate a tracheotomy on this woman. The stenosis in the larynx being ever so small, is nevertheless sufficient to enable the patient to breathe tolerably well. For this reason, intubation would be out of the question. I have to add that in most of my examinations, the dried secretions were found in the anterior angle of the vocal cords, the place of predilliction. Very frequently, however, they were seen on all other places of the larynx on the border of the vocal cords, on their lower surface and on the arytenoids.

After having become familiar with the history of these two cases, the next question arising is: How is it that we come in contact daily with cases of rhinitis and pharyngitis sicca, seldom meeting examples of laryngitis sicca, and very rarely outspoken

Stoerk's blenorrhœa? Is it true, that laryngitis sicca is nothing but an extension of pharyngitis sicca?

In answering the latter question, first, there is one point remarkable. The phlegm of the retro-nasal catarrh, of pharyngitis granulosa and sicca goes downwards in accordance with the law of gravity, mostly attacking the esophagus and the stomach, a fact to which attention has been drawn repeatedly by laryngologists. Why does it reach the larynx in so few cases, and how is it that the most tenacious phlegm, the removal of which gave me so much trouble, should be found not only in the pharynx, but also and especially so in the larynx and down in the trachea, whilst the more fluid phlegm usually attacks the *entrance* of the larynx only? Lublinski[3] believes that laryngitis sicca is merely a continuance of pharyngitis sicca, and Felix Semon's[4] remarks seem to coincide with him. I differ from them, as I think that laryngitis sicca must be classed alone as an independent disease. The facts given to you would be quite sufficient to substantiate my statements, but allow me to mention another case as proof positive which in itself is of more than ordinary interest for our present subject. The case was published by Benno Baginsky[5] under the name of ozena laryngo-trachealis. This case, that otherwise resembled the blenorrhœa described by Stoerk, differed in that the larynx alone of the $12^1/_2$ year old patient, was affected by the disease, and *not* the nasal chambers, the retro-pharynx and the posterior wall of the pharynx. This was, therefore, a *genuine* disease of the larynx and trachea, making it clear that such a disease is possible, though rare. As a further proof in addition to this, I state that the crusts in many cases of laryngitis sicca choose with preference just that place, which is the least accessible from above, *i. e.*, the anterior angle of the vocal cords.

This, too, is opposed to the theory that the disease originates in the pharynx. But I desire no misunderstanding, and by no means create the impression that it is my idea that out of every slight atrophic laryngitis now, Stoerk's blenorrhœa must develop. Of one thing, however, I am convinced that Stoerk's blenorrhœa is nothing more than the result of some cases of laryngitis sicca or ozena laryngo-trachealis, especially those which are serious or much neglected. But I will now quote others.

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[3] W. Lublinski: "Ueber Laryngitis sicca sive atrophica." *Deutsche Medic. Ztg.*, p. 99, 1886.

[4] *Internat. Centralbl. f. Laryngologie.*, p. 251, Vol. 1.

[5] Benno Baginsky: "Ein Fall von Ozaena laryngo-trachealis." *Deutsche Med. Wochenschr.*, p. 296, 1876.

It is most peculiar, that with the exception of Stoerk and his school, only few firmly believe in a special form of the disease. Even other laryngologists of Vienna, who also see a great many patients from Galicia and Poland, deny the existence of such a sickness; as for example, Schrötter, to whom we will refer later on. A case of Stoerk's blenorrhœa, presented by Grabower before the Berlin Laryngol. Society, January 10, 1890, was generally doubted as such, even by the former assistant of Stoerk, Dr. P. Heymann.

The other authors I make mention of are Max Bresgen[6] and Krakauer,[7] both also former assistants of Stoerk. While Bresgen still upholds Stoerk's opinions, Krakauer differs in that he says: "The process in the larynx has great similarity to the so-called laryngitis sicca, while in the nose it reminds one of the common ozena, and I hold the name which Mr. B. Baginsky substituted for that of blenorrhœa, the name of ozena laryngo-trachealis as a happily selected one." B. Frankel[8] years ago pronounced Stoerk's creation of a new disease to be without sufficient reason, as secretions dried into scabs with or without smell are to be found idiopathically, though less often than in the nose, in the pharynx and trachea, whenever these organs are attacked by an atrophic catarrh. P. Heymann[9] and I. Schmidhuisen[10] both plead for a special form of the disease. Gordon Holmes[11] and David Newman[12] mention a special form of atrophic laryngitis, without touching the question of Stoerk's blenorrhœa at all.

Schrötter also having drawn attention to the fact that there exists a form of catarrh in the larynx and trachea, characterized by dryness of the membrane, loss of epithelium, excoriations and the like, now adds, as I have lately read in his textbook,[13] that it could

[6] Max Bresgen: "Einige interessante Fälle aus dem Ambulatorium des Herrn Professor Stoerk in Wien." *Deutsche Med. Wock.*, Nos. 26 and 27, 1876.

[7] Krakauer: "Fall von Stoerkscher Blenorrhoe." *Berl. Klin. Wochenschr.*, p. 973, 1887.

[8] B. Fränkel's article in *von Ziemssens Handbuch IV.*, 1, 2, Aufl., p. 154.

[9] *Berl. Klin. Wockenschr.*, 1887.

[10] I. Schmidhuisen: "Zur Casuistik der chronischen Blenorrhoe der Nasen-Kehlkopf & Luftrohrenschleimhaut." *Berl. Klin. Wochenschr.*, p. 150, 1878.

[11] Gordon Holmes: "Chronic Catarrhal Laryngitis." The *Lancet*, November 8, 1884.

[12] David Newman: "Two lectures on Chronic Laryngitis." The *Brit. Med. Jour.*, July 4, 1885.

[13] L. Schrötter: "Vorlesungen ueber die Krankheiten des Kehlkopfes, etc." *Wien and Leipzig*, 1892.

easily be imagined that the same process, consisting of an atrophy of the mucous membrane, degeneration of the glands and of a copious production of quickly drying secretions could even also originate first from the laryngo-tracheal mucous membrane or could be limited to it. When Schrötter, and with him, other authors speak of a degeneration of glands and increased secretion, it is a combination which I cannot understand, because the glands must be either degenerated and then they secrete less or not at all, or they secrete more and cannot be degenerated. I believe that in reality the glands secrete less than normally, that in addition the chemical combination of the secretion is so abnormally changed that it dries with exceptional readiness. Schrötter expresses his views explicitly, *i. e.*, if the conditions called laryngitis sicca or ozena laryngo-trachealis (Baginsky), are not already identical with Stoerk's blenorrhœa, they could very well correspond to the initial stage of that disease. I had read this last view of Schrötter long after having watched my two cases; at that time I had already formed my own opinion, and his views served to strengthen my belief, which belief was corroborated in an almost experimental way in the second case.

That in some of these cases there is a process similar or identical with the rhinoscleroma, I think I am justified in believing, after a case that came under my notice at the Montefoire Home. The patient, a man 27 years of age, born in Russia, came to the Montefoire Home with the outspoken symptoms of rhinoscleroma. He died suddenly a few hours after admission. The autopsy of the upper air passages was made by the house physicians, Drs. Bloch and Fränkel. I saw the specimens a few days later—the patient himself I had never seen. In the larynx there were extensive cicatricial adhesions of the mucosa and submucosa. This process affected especially the ventricles of Morgagni. But the whole appearance of the larynx differed materially from that of Stoerk's blenorrhœa. The whole surface was covered with a whitish layer, which could be easily removed. There were no crusts in the larynx. Signs of syphilis were not to be found on the cadaver. This case will be published hereafter by one of the house physicians in extenso. However, it was interesting to us to see these specimens of a disease belonging to this category.

That my second case shows at present a typical picture of Stoerk's blenorrhœa, and that Stoerk himself would not contradict the diagnosis of this case, there is hardly a doubt in my mind. The woman, coming as she does, from Galicia, completes the chain

of evidence demanded by Stoerk. But this demand of Stoerk is unnecessary and unjustly exacting, as my conviction compels me to believe that this is merely an accident. As you have heard, my first case was a native of the United States, whose parents even had never been in Austria. That furthermore, people in better circumstances can acquire this disease, Stoerk afterwards himself mentions. Of his eleven cases, one was a priest, the second a student of philosophy, and the third, a lady of "extraordinary intelligence." The case of Krakauer was a woman of Berlin. He does not mention whether she fulfilled the requirement of an uncleanly condition. The same can be said of the case of Grabower. Both of these cases make positive that Stoerk's blenorrhœa may occur in any country and under any condition, though not so frequent.

If we, in conclusion, review the most salient points in the history of our two patients, we see No. 1, whose disease reached such a high development simply because she did not seek medical advice out of fear; for had she been treated, the progress of the disease might have been checked, although not eradicated, as there are no small number of dispensaries open to the poor of New York where they can find the most skillful aid. As a proof, the patient found relief after regular treatment. Her aphonia gave way to hoarseness in a short time. Whether the improvement would have been further advanced is, of course, questionable. She left the clinic long ago.

Circumstances are different in the second case. She has really been reared amidst poverty and filth, and has been influenced so little by the social atmosphere of New York that she continues her former habits and mode of living. This still suffices to assist the disease in its progress. Notwithstanding, even in her case, there was a subjective improvement, and the hoarseness substituted aphonia, whenever she made several successive visits to the clinic.

We see, therefore, that this patient at first showed the objective symptoms of laryngitis sicca, a fact which in the discussion following my demonstration before the German Medical Society was not doubted by any of the speakers. After a few weeks, a superficial exulceration set in; later on an adhesion of the vocal cords at their anterior angle, an hyperplasia, etc., followed and the picture of the disease formerly called Stoerk's blenorrhœa was slowly formed and completed under our eyes. This case, therefore, is positive evidence that laryngitis sicca and Stoerk's blenorrhœa are one and the same disease, merely in different stages. And if you question

me why it is one so often sees laryngitis sicca and so seldom the so-called Stork's blenorrhœa, I answer that most of the patients are not as indifferent as the poor population of Galicia, Poland, etc., and that they usually consult a physician sooner, and give us occasion to change their mode of living, and through direct local treatment, check the disease.

I have adopted the name of laryngitis sicca for this disease, following B. Fränkel's suggestion, as it covers a broader field, and I leave the name ozena laryngo-trachealis for those cases where ozena really exists, as in the nose.

And now, but a few words on the treatment of this disease, which in its latter stages becomes so hopeless. I proceeded with both patients in the following manner: First, I sprayed with a powerful spray larynx and trachea, during deep inspiration. This usually produced a coughing spell, by which some scabs were expelled. Whether I used for the spray Dobell's or a weak solution of chloride of zinc, or of tannic acid, or nitrate of silver, I confess made very little difference. The effect was the same. Following this, I put tampons dipped in Lugol's solution in both nostrils, leaving them in ten to thirty minutes. Thereafter, I sprayed again the larynx and wiped away all visible phlegm from the naso-pharynx and pharynx. Internally, I gave K. I. and pilocarpine without a perceptible effect. The fol. jaborandi and the fl. extr. jaborandi seemed to act with better effect than pilocarpine.

As a final and most efficacious treatment, after cleansing the upper air passages in the above manner, I applied the massage of the throat. Over a year, I am working at this, and hope in a short time to publish elsewhere the experiences I have thus far gathered. To mention it as a part of my treatment was doing but justice to the good effect it gives.

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CONGENITAL OCCLUSION OF THE POSTERIOR NARES.

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AMONG the congenital deformities of the nose, none have a more important bearing on the health of the patient than the occlusion of the nares. When the occlusion is bilateral, even the life of the patient is in danger.

Although this abnormality is not referred to in many of our treatises on rhinology, still a number of cases have been described, as by Voltolini,[1] Luschka,[2] Cohen,[3] Emmert,[4] Bennett,[5] and others. It is, however, fortunately a rare form of *lusus naturae*. as is demonstrated by the fact that of 12,000 cases treated in the ear, nose and throat department of the Eye, Ear, Nose and Throat Hospital of this city, no case of congenital atresia naris has yet been registered.

The *etiology* of this condition is clouded in the same darkness which obscures our knowledge of teratology generally.

Symptoms and Prognosis. In cases of unilateral occlusion of the posterior nares, symptoms, except such as refer to a certain discomfort from inability to clear the nostril of its secretions, may be entirely absent. Thus, in one case which came under my observation, the patient, a married lady of about 27 years of age, having a congenital occlusion of the left choana, complained of no ear or throat symptoms, but only of an inability to clear the nostril of mucus by blowing the nose.

In other cases, however, we find the usual symptoms resulting from nasal stenosis. In the case which I will report in this article, the patient frequently suffered from laryngitis and bronchitis, and had had, on two occasions, a purulent discharge from the ear on the affected side. The voice also had a marked nasal intonation.

[1] Voltolini: Die Anwendung der Galvano-Kaustik, Vienna, 1870.
[2] Luschka: Der Schlundkopf der Menschen, 1868.
[3] Cohen: Diseases of the Throat and Nasal Passages, New York, 1879.
[4] Emmert: Lehrbuch der Chirurgie, Stuttgart, 1853.
[5] Bennett: Annals of Ophthalmology and Otology, January, 1893.

When a child is born with bilateral occlusion of the posterior nares its life is endangered unless relief can be given by operative measures. The difficulty in breathing tends to develop a pulmonary engorgement, aggravated during sleep by the suction drawing the tongue over the orifice of the larynx. The nursing is also interfered with, and unless speedily relieved, the child soon succumbs.

In a case reported by Ronaldson,[6] the child died soon after birth from inability to breathe through the nostrils. An examination showed that the posterior nares were completely occluded by a thick membrane.

Diagnosis. The diagnosis is made by means of the nasal speculum and probe, together with the rhinoscopic mirror, or in children, with the finger inserted into the post-nasal space. The history of the case is important and will materially assist the diagnosis.

The nostril being examined by reflected light, and the mucous membrane cocainized, a probe is passed into the nostril and if no passage can be found into the post-nasal space, then the soft palate should be cocainized so that a palate retracter may be applied and the posterior nares carefully examined with the rhinal mirror.

In children in whom this manipulation cannot be carried out, bromide of ethyl anesthesia should be induced, and the parts carefully examined with the index finger in the naso-pharynx, and a probe passed anteriorly through the nostril.

The previous history and clinical appearance will usually allow an easy differentiation of a congenital occlusion from an acquired atresia due to lues, rhino-scleroma or the blenorrhœa of Stoerk. Robertson also reports a case of nasal occlusion following an attack of scarlet fever.

The obstruction may be due to a membranous or osseous formation, or both. The bony wall may be due to an excessive development of the pterygoid process of the sphenoid, or excessive development or a lateral curvature of the vomer towards the affected side. In the case upon which I operated, the nostril ended in a wedge-shaped funnel, the obstruction being due to a welding together of the posterior extremities of the turbinals and vomer into one bony mass.

Treatment. A membranous occlusion may be relieved by the electro-cautery, but a bony wall requires an electric or dental engine and drill, and sometimes the nasal saw. As in the stenoses

[6] Ronaldson: *Edinburgh Medical Journal*, May, 1881.

of other canals, this condition has a tendency to recur from cicatrical contraction, which tendency is aggravated by repeated operations The object then should be to make the opening as large as practicable at the first operation, so that after cicatrical contraction has taken place there will still be left a passage of sufficient size.

While the operation for opening the occluded choana does not appear to present any special danger, still one case of a fatal result is reported by Lange[7] of Copenhagen. In this case the right choana of a 19-year old patient was occluded by a septum, the perforation of which was accomplished by means of the electro-cautery under chloroform anesthesia, the operation being followed by free breathing. The next day, however, meningeal symptoms developed, followed by death. No post-mortem was made, but the author supposed that the fatal result was due to a sinus thrombosis.

After operating for atresia of the anterior part of the nostrils, I have successfully used a packing of iodoform gauze, changed every second day until the healing process was completed, but the packing does not work advantageously in the posterior nares, partly on account of the difficulty of properly packing the part without danger of the gauze falling into the throat, and partly because the congestion, which follows the operation, makes it difficult to adjust the packing at the posterior part of the nostril after the first day.

Hemorrhage is usually considerable, but may be controlled by packing with iodoform gauze. Cocaine anesthesia is used, a twenty per cent solution being applied both to the anterior and posterior part of the obstruction.

The *modus operandi*, which the writer has found most practicable, will be described in the following case:

Annie M., aged 16, was referred to me on account of a complication of ear, nose and throat trouble. The patient complained of noises and pain in the right ear, and stated that she has had an "abscess" in the ear on two occasions. She coughed considerably, especially during cold changes of the weather, and easily became hoarse. She had an accumulation of mucus in the right nostril which she could not blow out, but prevented the discharge from falling out by occasionally "mopping" the nose. She had never been able to blow through this nostril since her birth.

After cocainizing the nostril, an attempt was made to pass a probe through the nostril, but was stopped at the posterior end. With the rhinoscopic mirror, the posterior opening of the left nostril appeared normal, but, on the right side, there was absolutely no opening—differing in this respect, from another case which I saw, in which there was an opening just large enough to admit a probe.

[7]Lange: *Journal of Laryngology, Rhinol. and Otol.*, Vol. VI.

To the right of the septum could be seen a slight vertical depression, indicating the line where the vomer was attached to the fused mass of turbinals, whose outline could be faintly made out.

The whole side, however, was covered with an unbroken surface of mucous membrane, and, as was learned during the progress of the operation, the obstructing wall was composed of bony tissue.

The right nostril was first cocainized and also the posterior part of the obstruction. The pharyngeal surface of the velum palati was also cocainized in order that a White's palate-retractor could be applied, so as to give more room to follow the operation from the post-nasal space.

A long pin, similar to a lady's hat-pin, was then passed into the nostril and through the obstruction, in order to note at what point it entered the naso-pharynx. A small opening was then drilled with a burr, operated by an electric motor, the course of the burr into the naso-pharynx being watched by means of the rhinoscopic mirror. The first opening was then enlarged by the use of successively larger burrs and the reamer, operated by the motor.

(FIG. 1.)

Congenital Occlusion of Right Choana-Rhinoscopic Image. The white line shows the artificial opening after operation.

After the first opening through the obstruction was made, it was found difficult to watch the course of the operation by means of the rhinoscopic mirror, on account of the blood obscuring the mirror and the opening which had been made in the obstruction. The index finger was thereupon passed into the post-nasal space, and materially faciliated the operation. The revolving point of the drill could be felt entering the naso-pharynx, and without injury to the finger.

This proceedure was also followed in another similar operation, at which I assisted, and also worked well in this case.

The drilling was continued with burrs and reamer until an opening about seven millimeters in diameter was made, which appeared to allow the passage of a sufficient quantity of air. The bottom of the opening was in a line with the upper surface of the soft palate so as to allow freer drainage from the nose.

Hemorrhage was free but not alarming, and was controlled by stopping occasionally to pack the bleeding part with iodoform gauze. The patient complained of but little pain. After the operation, the nostril was insufflated with aristol, and the posterior part packed with iodoform gauze.

The operation was apparently successful. The patient stated that she experienced great relief in breathing through this nostril, that she slept better and felt brighter.

This continued for about three weeks when the patient complained that she felt less and less air through the affected nostril, and in spite of the daily passage of sounds, the opening became gradually smaller until the nostril was again almost occluded.

A second operation was therefore decided upon. An opening about six millimeters in diameter was drilled through the lower part of the obstruction, and a similar opening through the upper part. The intervening piece of bone was then removed with the nasal saw, and the edges made even with the reamer. The hemorrhage was controlled as before, and the same after-treatment was carried out as after the first operation.

There was a certain amount of contraction in the opening, but the passage has never since closed, and is sufficiently large for breathing. Six months after the operation, the patient was reported to me to be still breathing freely through the nostril, and to have materially improved in her general health.

Medical Building.

ASEPSIS AND ANTISEPSIS IN THE NOSE AND THROAT.[1]

By Jonathan Wright, M. D.,
of Brooklyn, N. Y.

Mr. Chairman and Gentlemen of the Surgical Section:

After thinking over your invitation to make a few remarks on "practical and efficient cleansing of the nose, mouth and pharynx prior to operations thereon," I came to the conclusion that you had made a mistake in choosing me, as I do not know how to cleanse the nose in a surgically aseptic sense. You have informed me, however, that it is not meant in that sense. Miller, Park, and many others have described the large number of pyogenic bacteria in normal throats.

"[2] It has been shown by Besser, Delletti, myself, and others, that even the normal nose, in the majority of cases, is the site of more or less numerous agents of suppuration, the staphylococcus pyogenes. If you will make cross and vertical sections of the nasal cavities in the cadaver, you will at once see the entire impossibility of disinfecting the anfractuosities, the depressions, and projections of the mucous membrane of the cavities themselves, and still more of the accessory cavities, the maxillary, the ethmoid, sphenoid, and frontal sinuses, all of which communicate with the nose proper, and all of which bacteria may be found. The naso pharynx also is an especially favorite breeding-place of infective bacteria. I have found there the streptococcus erysipelatosus in an apparently normal case, and produced phlegmonous erysipelas with the cultures in rabbits.

"Were it not to be presumed that the intra-nasal tissues possess or acquire considerable power of resistance to the entrance of infective agents, or of neutralizing their baneful properties, it would be hard to understand why cases of septicemia are not of frequent instead of rare occurrence after intra-nasal operations. Another clinical phenomenon has attracted my attention in this

[1] Read by invitation before the Surgical Section of the New York Academy of Medicine, April 9, 1894.

[2] Nasal Douches and Sprays—*Medical Record*, January 14, 1893.

connection, and that is the comparative harmlessness of surgical procedures when the site of operation is below a region of suppuration, as in antrum or ethmoidal trouble. Pus continually flows down over the wounded septum or turbinated bone, yet with very imperfect cleansing it is rare that any local or constitutional evidence of septic trouble supervene. Indeed, I have almost persuaded myself that there is less apt to be a rise of temperature in these cases than where there is no previously existing suppuration."

Remembering these bacteriological and clinical facts, the question naturally arises, "why should we cleanse the nose and throat prior to an operation?"

Lermoyez and Wurz have lately, in a very elaborate paper,[3] stated, and they reinforce their statements by numerous apparently faultless experiments, that the nasal cavities are not only sterile, but that the nasal mucus is a germicide annihilating anthrax spores when mixed with broth containing them. Accepting these statements as trustworthy it would seem a waste of time, and bichloride to cleanse the nose prior to an operation.

Disregarding this latest and possibly not most reliable announcement in regard to nasal bacteriology until we have confirmation of it, we must start with the understanding that the nose and mouth and throat are lurking places not only of pyogenic bacteria, but also occasionally of the pneumococcus and Loffler's bacillus. We are not in a position as yet even to conjecture what the protective influence against them is. We cannot believe it is only the general protection now supposed to reside in the albumoses of the blood and other tissues. Sepsis is the least of the dangers we fear in tonsillotomy, nasal spur operations, or those for post nasal lymphoid growths. As general surgeons, you are better able to judge what the result would be in many cases when operations elsewhere in the body are done in such an infected area. It seems reasonable to suppose that there is some local protection residing in the immediate vicinity of the mucous membrane itself, since this immunity from sepsis I believe does not hold so true for wounds deeper into the tissues.

However as prudent operators, we should conform as far as practical with the general consensus of modern surgical opinion.

To cleanse the nose, a coarse spray of Dobel or other alkaline antiseptic solution from a compressed air apparatus should be used anteriorly.

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[3] "Le Pouvoir Bactericide du Mucus Nasal." *Annales des Maladies de l'oreille et du Larynx*, August, 1893.

The ordinary hand atomizers are valueless. Follow this immediately by the use of the post-nasal syringe, using several syringefulls of the same solution warmed so that the nasal chambers are thoroughly flooded from behind. This is much more efficient than the anterior spray.

The same procedure may be used to cleanse the naso-pharynx. For the mouth and oro-pharynx, spray them out thoroughly with peroxide of hydrogen solution about 1-3. Let the patient follow this up by rinsing his mouth out and gargling with a 1-5000 sol. of bichloride.

What we have done here is not to render the area aseptic. We have simply somewhat diminished the number of germs on the surface. Dr. Park has shown this bacteriologically for the mouth and pharynx. As for myself, in the nose, I place a good deal more reliance upon irrigation after the operation than upon preliminary cleansing, and I think this a matter of some importance because drainage in the nose is imperfect, and secretion gathers at the seat of operation. In the ordinary operations on the naso-pharynx and pharynx, I think neither preliminary cleansing nor subsequent irrigation influences the result as drainage is free. There is not the slightest doubt but that bacteria are absorbed at the site of the wound. Irrigation diminishes the dose of organisms absorbed, but nature herself does the *efficient* antiseptic work. Where there is external dressing, irrigation of the nose after operation may not be practicable, but I should be disposed to depend upon that rather than upon the preliminary cleansing for my antisepsis. Asepsis is out of the question. The same, to a less extent, is true of the mouth.

73 Remsen Street.

ANNALS OF OPHTHALMOLOGY AND OTOLOGY

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CLINICAL MEMORANDA.

SECONDARY HEMORRHAGES FOLLOWING CATARACT EXTRACTION.

BY WALTER R. PARKER, M. D.
OF DETROIT, MICH.

LATE HOUSE SURGEON, WILLS' EYE HOSPITAL, PHILADELPHIA.

FOR the privilege of reporting the following cases I am indebted to Dr. Hall, Dr. Goodman and Dr. Oliver, attending surgeons to Wills' Eye Hospital, Philadelphia.

Dan'l B., aged 64. January 5, 1893, lens extracted with loop after an iridectomy had been done. Vitreous semi-fluid, small amount escaping. There was a profuse hemorrhage, the coloboma and papillary space remaining full of blood. Atropia instilled, and ordinary antiseptic dressing applied.

January 6, wound closed; blood absorbing.

January 7, fresh hemorrhage, whole anterior chamber filled with blood.

January 9, blood rapidly absorbing; some iritis; atropia continued.

January 20, no trace of blood; conjunctiva clear; iritis gone; marked secondary present.

March 14, capsulotomy done.

March 21, V. w. S. + 11 = C. + 2 ax. 150° = $\frac{20}{60}$.

Geo. R., aged 63. March 14, lens extracted with iridectomy, followed by large prolapse and loss of vitreous, caused by patient squeezing. Protruding vitreous excised; eye closed.

March 15, wound closed; reaction slight.

March 17, a. m., eye quiet; patient allowed out of bed; p. m., large hemorrhage in anterior chamber; no pain; no history of injury. A pressure bandage was put on after instillation of atropia, and patient put to bed.

March 18, blood absorbing.

March 19, fresh hemorrhage filling anterior chamber; leech, atropia, and bandage.

March 21, blood nearly gone; eye quiet.

March 24, no trace of blood; vitreous opacities.

March 25, slight hemorrhage.

March 28, eye clearing.

No trouble followed, final V. w. S. + 11 = $\frac{20}{100}$.

Jacob G., aged 72. September 18, simple extraction done without accident. While washing eye, patient squeezed, causing prolapse of iris and vitreous. Iridectomy done through prolapsed vitreous, and vitreous cut away. Coloboma filled with blood; eye closed.

September 20, wound open; coloboma and pupillary space filled with blood.

September 22, anterior chamber formed; blood absorbing.

September 23, blood nearly gone.

September 24, fresh hemorrhage one-third filling anterior chamber; leech, atropia, bandage.

September 26, blood nearly gone.

October 2, large hemorrhage from behind iris bulging a portion of the iris forward, and nearly filling coloboma and pupillary space.

October 4, blood almost gone; vitreous opacities; V. = light.

October 11, bulging of iris almost gone; V. = $\frac{1}{200}$.

October 20, small hemorrhage from behind iris, up and out.

November 8, no trace of blood in anterior chamber; vitreous opacities; V. w. correction = $\frac{20}{200}$.

In the first two cases no note was made of general condition. In the third case age was well borne generally, the radials were distinctly beaded and second aortic sound accentuated. No valvular lesions were found.

32 Adams Avenue West.

A NOTE OF PROGRESS IN THE METHOD OF MEASURING AND DESIGNATING PRISMS IN OPHTHALMIC PRACTICE.

By Swan M. Burnett, M. D., Ph. D.,
of Washington, D. C.

SINCE Dr. E. Jackson first proposed a reform in the numbering of prisms by the minimum deviation power at the Ninth International Medical Congress in Washington in 1887, there has been a pretty full discussion of the subject in the various aspects in this country, and while there has been no general expression of unity among the profession as to a preference for any one particular method of designating prisms it would be safe to say that the majority of those who have given the reform any serious consideration have adopted the method of expressing their power by their deflection in centimeters on a plane at a meter's distance. This is the system first proposed by Mr. Prentice in 1890, and was adopted by the Ophthalmological Section of the American Medical Association in 1891. The unit of this system is a prism causing a deflection of 1 centimeter on the meter plane and is called a prism-diopter, (P. D.); a prism giving a deflection of 2 centimeters at the meter plane is 2 P. D., etc. The centrad system which was proposed by Dr. Dennett, and adopted by the Amer. Oph. Soc. in 1889 has been so modified by its advocates that it does not differ in its essential principles from the prism diopter, and now for the prisms which are in common use in ophthalmology these two systems, which are the only strictly scientific and available ones that have been proposed, are for all practical purposes the same. So it may be said, in a general way, that in whatever manner prisms may be designated, whether by degrees, centrads, prism-diopters, if they are measured at all, they are measured on the basis of the unit of a centimeter's deflection on a plane at a meter's distance. It happens, fortunately, that this method falls in close approximation with the old method of numbering in degrees, since a prism of 1 P. D. has about the same power as a prism marked 1° in the old style, and so the machinery which has been in use in the manufacture of prisms need not be changed, and most of the prisms now in stock can be used in the new system of numbering. The introduction of the reform has, therefore, been comparatively easy since it required no revolution anywhere, and for its carrying

out on the part of the practitioner there is required only a meter measure and a centimeter rule, though the charts which have been offered, first by Prentice and afterwards by Ziegler, Herbert and others, have, of course, many desirable practical conveniences.

It is not our purpose to again go over the numerous advantages both scientific and practical which this method offers; these will be found duly set forth in Mr. Prentice's various papers as well as my own and others who have written on the subject.[1]

The object of this short communication is to call attention to the fact that the advantages of the system have also been fully recognized by the manufacturing optician, and that now the trade is supplied with prisms ground to exactness, while the strength of each prism corresponds acurately with its number expressed in prism-diopters. The American Optical Co., of Southbridge, Mass., one of the largest manufacturing optical firms in this country, have just issued a catalogue in which they announce that all the prisms in their trial cases, and for use in the trade are ground to the prism-diopter system. They have also adopted as a mark of designation the prismatic figure (△) which is the Greek letter delta, and which very appropriately symbolizes the prism-diopter as was indicated by Mr. Prentice in one of his early papers; thus 3△ means 3 P. D., etc. This sign has this advantage among others, that it is not likely to be confounded with the sign of the degrees (°) indicating the axis of the cylinder in astigmatism, for instance, I have also information from the Geneva Optical Co., of Rochester, N. Y., the other largest manufacturing optical company in this country, that they too are prepared to furnish prisms in accordance with the prism-diopter system when so requested, and they will undoubtedly soon place them in the general market. It is thus seen that the dioptral system is now as firmly and securely fixed as regards prisms as it has been for a number of years in regard to lenses, and both are correlated, as they should be, under the universaly accepted metric system, in a manner which is scientific, convenient of application, and easy of comprehension.

[1] C. F. Prentice: A metric system of numbering and measuring prisms. *Archives of Oph.*. Nos. 1, 2 and 3, 1890. A prismometric scale. *Amer. Jour. of Oph.*, Oct., 1891. Le memérotage et la mesure des prismes. *Annals d'Oculestique Juillet*, 1892. Dr. E. Jackson's article in *Oph. Review*, June, 1890. Dr. B. A. Randall, article in *Med. News*, April 4, 1891. The reformed numeration of prisms and the centrad as a *unit. Trans. Amer. Med. Ass'n.*, 1891. Swan M. Burnett, the metric system in numbering prisms. *Oph. Review*, Jan,, 1891. (Also introduction to Mr. Prentice's first paper in the *Archives of Ophthalmology*, 1890). The prism-dioptry vs. the centrad. *Trans. Amer. Med. Ass'n.*, 1891. On the reform in numbering prisms, *Med. News*, May 2, 1891. A metric system for numbering prisms with a description of an instrument for measuring their deviating power. *Trans. Internat. Med. Congress*, 1890.

REPORT ON PROGRESS—OPHTHALMOLOGY

REVIEW OF CURRENT AMERICAN AND ENGLISH OPHTHALMIC LITERATURE.

By Charles H. May, M. D.,
of New York.

THE EYE TREATMENT OF EPILEPTICS.

Ambrose L. Ranney, A. M., M. D., (*The New York Medical Journal*, January 13, 20, and 17, and February 17, 1894). The greater part of this lengthy article is occupied by the histories of cases. The author has selected twenty-five cases which "indicate what to his mind would be about the average results of his personal examinations and treatment of a large number of epileptics during the past ten years." *All but four cases had errors of refraction; every case showed heterophoria.* Treatment by drugs was dispensed with and eye treatment alone made use of; glasses correcting the errors of refraction were prescribed, (not, however, in every case), and tenotomies were performed for the relief of the heterophoria. The results were the following: Ten cases had no attacks for four, five, six, seven, nine and eleven months, one, two, two and one-half, and seven years; two cases had one attack each in eight and sixteen months; two cases one each in three years; four cases resulted negatively, (no improvement); three cases had from three to six attacks in periods varying from eight to eighteen months; four cases are reported as "somewhat less," "attacks less than before," "reduced in number," "no convulsion in four months; attacks of petitmal much less frequent."

Although Dr. Ranney explains as his reasons for not giving all the cases which had been subjected to eye treatment exclusively, that "the number would be too large to admit of their complete histories, and the labor of preparing their records for publication would be too great," and says "I admit that any deductions regarding the eye tests in epileptic subjects derived from twenty-five cases can not be regarded as final," he has given certain conclusions; we must therefore regard these as based, not entirely upon the cases which he recites in this paper, but rather upon his experience in general.

It is a pity that such an opportunity for a valuable contribution to the much-discussed question of the status of heterophoria in the production of various nervous disorders has been lost; that there is

such a relationship no one can deny; how much it amounts to or how often it is encountered, is still a question. Had the writer taken hundreds of cases, even though he had been compelled to limit himself to the report of the examination of the refraction and of the condition of the muscles, the treatment by glasses and tenotomies and the results after a year or two, a very good paper would have resulted, valuable both scientifically and practically.

Dr. Ranney reviews Mr. Dodd's very instructive report concerning the refractive conditions of epileptics, as follows:

"At a late meeting of the Ophthalmological Society of the United Kingdom, a report of the refractive conditions of epileptics was made by Dr. Dodd, (based upon the examinations of a hundred epileptic subjects as contrasted with similar tests upon fifty healthy persons). The effects of treatment by a correction of the refraction alone by glasses were also reported.

"Out of one hundred epileptic subjects, seventy-five were found to require glasses, and were directed to wear them. Only fifty-two of these patients were faithful in obeying instructions. Of these fifty-two, thirteen had no attacks for an interval of from one to two months, thirty-six were more or less benefitted, and three were not apparently influenced by the correction of the refraction.

"The conclusions drawn by Mr. Dodd were: 1. That errors of refraction may excite epileptic seizures. 2. That the correction of the refraction is of value in the treatment of epilepsy. 3. That other sources of irritation may be suspected when a correction of refraction fails to afford marked relief.

"To any one familiar with the later methods of investigation and treatment of heterophoria, the investigations of Mr. Dodd must seem singularly incomplete. Yet it is interesting to note that the correction of refraction alone accomplished enough in cases of chronic epilepsy to warrant a verdict in favor of eye treatment."

Dr. Ranney does not report Mr. Dodd's results correctly. In both *The Lancet* and the British *Medical Journal* reports of the meeting of the Ophthalmological Society of the United Kingdom at which Mr. Dodd presented his paper, it is stated that the length of time during which *these thirteen cases were free from attacks was from four months to one year.* This would make a much better showing and would make Mr. Dodd's results from the simple correction of errors of refraction in seventy-five *unselected* cases almost, if not quite as good as those obtained by Dr. Ranney by frequent tenotomies, in his twenty-five *selected* cases.

Had Dr. Ranney followed Mr. Dodd's style in reporting his cases, adding the results of his examinations of the condition of the muscles and the treatment of heterophoria, his paper would have been a very useful one. He has, as was to be expected, laid particular stress upon heterophoria and tenotomies for its relief. In

a number of cases in which hypermetropia existed, this error of refraction was ignored in the treatment; at least, he has failed to record any such correction.

The histories of cases include much that is irrelevant—scientifically considered; thus the following lines representing extracts from the histories of cases will allow the reader to judge:

"A most pathetic scene occurred at the depot on the arrival of this boy, his mother becoming hysterical over what she termed "his resurrection to health and mind." (Case 2).

"In fact it (his mental condition), had become so alarming that his father, with tears in his eyes, said, "that although he was his only son, he would rather see him dead than in his present position." (Case 5).

"I want to tell you how very grateful I feel for the great good you have done my boy. It is really wonderful how he has improved in health since he has been under your care. * * * This seems almost a miracle when you remember how the boy suffered before coming to you." (Case 6).

"It has occurred to me that you may have considered that ingratitude has been shown by a failure on my part to indicate how much my dear sister has improved," etc. (Case 9).

Such extracts from letters of grateful patients may have their uses, but they should certainly not have space in scientific papers published in medical journals, to the exclusion of more instructive matter.

In one part of his paper, he says concerning orthophoria: "I regard this as an extremely rare condition in epileptics." If, instead of all this irrelevant sentimental matter, Dr. Ranney had reported how many of all the cases treated during the past few years had normal adjustment of the ocular muscles, and then by way of comparison, how often orthophoria occurred in individuals who enjoy perfect health, he would have enhanced the value of his paper by definite scientific data, which would have tended to accomplish something in the solution of this disputed question.

His conclusions are based upon general experience, and not, strictly speaking, upon the twenty-five cases reported; they embody many truths and many statements which every oculist will agree to and consider good, but also some which are too extreme to be generally accepted. The paper may be of value in encouraging investigation in what may be, and probably is, a fruitful field.

SUBCONJUNCTIVAL HEMORRHAGE LIMITED TO THE OUTER PART OF THE EYE; A SIGN OF FRACTURE THROUGH THE CORRESPONDING ORBITAL PLATE.

Rutherford Morison, M. B., F. R. C. S., (*The Lancet*, January 6, 1894). The article contains illustrations from two patients —roughly fan-shaped hæmorrhage in the outer part of the eyeball.

This symptom, following injury to the fore part of the skull, the writer believes to be a frequent condition associated in the great majority of instances, with a fracture through the orbital plate corresponding to the eye affected. Three cases in which he had the opportunity of making post-mortem examinations after noting the presence of this sign during life, served to convince him that it is of considerable importance. He does not consider the shape of the hemorrhage due to pressure of the lids nor limited by the sheath of the external rectus. "A satisfactory explanation of why the hemorrhage is limited to this region is difficult. The presence of a quantity of loose cellular tissue in the outer part of the orbit, and the fact that there is more room here than elsewhere, may account for a small hemorrhage showing itself in this specific position, the shape in the later stages being largely determined by the pressure of the lids."

[While the above may apply to such hemorrhages following injuries to the skull, fan-shaped subconjunctival extravasations of blood occur quite frequently over the outer portion of the eyeball without any history of traumatism, sometimes as the result of a fit of coughing, at other times without any cause, C. H. M.]

SUBVOLUTION, A NEW PTERYGIUM OPERATION.

Boerne Bettman, M. D., Chicago, (*Chicago Medical Recorder*, January, 1894, and *Journal of the American Medical Association*, March 24, 1894).

In this article, the writer reviews the many theories which have been advanced to explain the origin and mode of growth of pterygium and the numerous methods of operation for its successful removal. Concerning the theories of pathology, he mentions the views of Arlt (micrococci), Theobald (muscular), Mannhardt (episcleritis), Fuchs (pinguecula). Then he describes the different operations: Excision (Cocius, Arlt), evulsion (Wright, Prince), transplantation (Desmarres, Knapp), strangulation (Szokalski, Galezowski), transplantation of a Thiersch's graft (Hotz).

He believes that most of these procedures, aiming either at destruction of tissues or at growth in a new direction, are frequently followed by a return of the growth; "none of the authors taking into consideration the salient features involved in all plastic operations of the conjunctiva, namely, the prevention of contact between two raw surfaces" * * "this accounts for the relapses which so frequently occur." The method which he has practiced during

the past six years prevents readhesion by turning the external surface of the triangular flap containing the pterygium underneath; to this method he has given the name "*subvolution.*" He performs the operation in the following manner:

"The pterygium is gathered up by the two branches of a fine forceps serrated at the ends. A knife is passed underneath it close to the cornea, and the triangular membrane is dissected off towards the apex. A suture with a needle at each end is passed through the apex. Both needles are inserted from above downward, thus leaving a loop of thread on its outer surface. The needles are now passed through the base from below outward. The points of puncture being the ends of parallel lines drawn from the punctures in the apex, and just far enough back so that the flap is turned upon itself underneath the base, the roll will correspond with the sclero-corneal margin. The ends of the suture are now firmly tied. We have induced a condition similar to gumming the flap of an envelope to its body. The under surface of the pterygium is brought in contact almost throughout its entire extent, and adheres. A readhesion to the cornea is prevented by the roll of mucous membrane at the sclero-corneal margin."

The operation is similar to Galezowski's, though the principle involved is different, since the writer's method does not aim at destruction. The folding produces a temporary unsightly thickening, disappearing in a few days: this folding adheres to the sclera, and the raw surface of the cornea is covered with scar tissue and regenerated epithelium.

"No matter how much the base of the pterygium contracts after dissection from the cornea, sufficient allowance can always be made by stitching the apex more or less forward. The apex may be cut off, or not, depending entirely upon the degree of thickness. The operation is especially indicated in large pterygia. Even in smaller ones, where the growth contracts considerably after having been separated from the cornea, it is followed often by good results. In these cases adhesions will form, which will draw the turned flap over the sclero-corneal margin."

THE RELATION OF OPHTHALMOSCOPIC FINDINGS TO DISEASES OF THE CEREBRAL CORTEX AS ILLUSTRATED BY A SERIES OF OBSERVATIONS UPON NEARLY TWO HUNDRED CASES OF EPILEPSY AND GENERAL PARALYSIS OF THE INSANE.

Charles A. Oliver, A. M., M. D., Philadelphia, (*University Medical Magazine*, March, 1894). "This paper," the author states, "resolves itself into a series of broad general formulations and conclusions that are the outcome of seven years' ophthalmic work among the male epileptic and paretic subjects in the State Hospital for the Insane at Morristown, Pennsylvania."

The following are among the *observations:*

"1. The ophthalmoscopic findings of the living intra-ocular tissues, especially those of optic-nerve and retinal structure, in cases of epilepsy of sufficient moment and standing, (as seen in the detained subjects of asylum life), to give numerous well-pronounced and uncontrollable seizures, are often of such a grade and of such a character as to constitute a type.

"2. The objective peculiarities of such living tissues, as seen in all grades of condition under the magnifying power employed in the direct method of ophthalmoscopy, are characterized by the appearance of a low and chronic form of retinitis and perivasculitis that is associated with a dirty red-grey incipient degeneration of the optic nerve.

"3. The ophthalmoscopic findings of the living intra-ocular tissues, especially those of optic-nerve and retinal structure, in cases of so-called general paralysis of the insane are so certain and so persistent in characteristic appearances, and are so increased in amount and degree in proportion as the general disease assumes its latent phases of retrogradation of the subject, that they become eminently characteristic of the type of the affection, and assume a definite expression of the stage of the disorder.

Observation four gives the principal retinal and optic-nerve changes which are found more pronounced in the third stage of the disorder, where they may be frequently recognized in their incipiency.

"5. The microscopic findings in the cerebral cortex in most cases of epilepsy where there have been long-standing, frequent and general seizures, consist principally in degeneration changes in the nerve-cells, especially of the second layer and in a secondary increase and tortuosity of the vessels themselves, with nuclear infiltration in the air walls.

"6. The microscopic findings of the cerebral cortex in cases of so-called general paralysis of the insane consist of degeneration changes in the nerve-cells, and increase of the vessels with thickening and infiltration of the vessel-walls.

"7. A careful analysis of the above definite ophthalmoscopic findings with the correspondingly known and recognized microscopic changes in the cerebral cortex in the two diseases, not only shows a correspondence in the types of the pathological conditions of the vascular and neural structures of the two membranes in question, but evidences an absolute co-relationship as to degree and amount of tissue-change, though, of course, not as to kind, in the several stages in the two diseases.

"The conclusion, therefore, from these observations, naturally resolves itself into the fact that the morbid process of the cortex disease, as seen under the microscope, if long-continued and if of any moment, can be recognized ante-mortem ophthalmoscopically in the optic-nerve-head and retina by similar relative changes of diseased action in these latter tissues."

TWO CASES OF SARCOMA OF THE LACHRYMAL GLAND.

J. R. Lawford and E. Treacher Collins, (*Royal London Ophthalmic Hospital Reports*, Vol. XIII, December, 1893).

"These two cases seem worthy of record as examples of a somewhat rare disease. The first case presented considerable difficulty in diagnosis; the short history and the physical signs led all those who saw the patient to suspect the existence of some inflammatory condition of the orbit, *e. g.*, abscess, suppurating cyst, etc. The second case was less puzzling, but in the early stage was thought to be most probably a periostial or bone lesion. It seemed doubtful at first if the tumor could be wholly removed without sacrificing or damaging the eyeball, but in each case this was accomplished, although not without considerable difficulty.

"In every case of sarcomatous growth involving the lachrymal gland, there is room for doubt as to whether the growth originated in the gland or spread to it from surrounding structures. In our two cases, the situation of the new growth between the gland tubules, which were separated by it, inclined us to think that the fibrous stroma of the gland was the starting point of the sarcoma. The clinical evidence also favors this view."

ACUTE CEREBRAL AMAUROSIS OF INFANCY.

William Gay, M. D., (Edin.), M. R. C. P., (London), (*Royal London Ophthalmic Hospital Reports*, Vol. XIII, December, 1893).

Dr. Gay reports seven cases of this condition which were observed at Moorfields and Great Ormond Street, Children's Hospital.

"Optic neuritis is a well-recognized symptom of meningitis, and in some of the cases which end in recovery a greater or less degree of blindness is found to result either from that or secondary atrophy. In certain cases, however, absolute blindness is discovered when the meningitic symptoms are beginning to clear up, and no ophthalmoscopic changes at all can be found to account for it. The pupils may be slightly unequal, dilated, or sluggish in the response to exposure to light, but sometimes they appear perfectly normal. The blindness persists for some weeks or months, after which sight, as a rule, is gradually restored; but occasionally one or both discs become atrophic, and recovery either takes place to a very limited extent or permanent blindness is established. Such a condition of amaurosis, unaccompanied by any visible changes in the fundus, is sometimes found after basic meningitis with cervical opisthotonos, and also after simple meningitis resulting from caries of the petrous bone, or following an exanthematous disorder. Sometimes, also, it follows an attack of which the status convulsivus is the most prominent symptom; and Nettleship, who was the first, I believe, to draw attention to this form of amaurosis, describes a case in which the symptoms were apparently those of thrombosis of the veins over the Rolandic area."

A CONTRIBUTION TO THE ANATOMY OF THE HUMAN RETINA WITH A SPECIAL CONSIDERATION OF THE TERMINAL LOOPS OF THE RODS AND CONES.

W. F. Norris, M. D., and James Wallace, M. D., Philadelphia, (*Univresity Medical Magazine*, March, 1894).

The authors point out the difficulties of studying the anatomy of the rods and cones of the human retina; hence anatomists have often been obliged to resort to the eyes of the lower animals, (fishes, frogs, birds, and some mammals). The retina of an eye removed for a wound would offer the nearest approach to a normal retina, and such an eye was used for the purposes of this contribution. Drs. Norris and Wallace mention Henle, Heinrich, Mueller, Max Schultze, and Hannover as the prominent writers in this field, and review their findings. Continuing, they say:

"Our illustrations show that the cones terminate in a looped extremity which passes down over the body of the cone, and after some convolutions in the position of the so-called external limiting

membrane passes along among the elements of the outer nuclear layer. Our preparations show a marked difference in the length of the cones, some of them forming loops much nearer to the external limiting membrane than do others. A fine longitudal striation has been observed by many investigators on the bodies of the cones, and the necks of the cones have been seen in the eyes of fishes to possess a series of transverse markings which presumable was due to their structure being composed of disk-like bodies. In our original photo-micrographs these delicate lines are plainly visible. The longitudinal markings can be traced from nearly the bases of the cones and are seen to undergo a twisting, which on the necks of the cones, produces the transverse striations which have previously been described in the eyes of fishes, As the neck recurves and passes down over the body of the cone as a fiber, we can see a portion of the cone over which it passes transversely striated in some places. We thus have transverse and longitudinal markings side by side. The transverse striations do not end in the layer of cones, but are plainly visible among the fibers of the outer nuclear layer. They may be followed into the optic nerve by this characteristic spiral wrapping. In the internal granular layer, the investment of the fibers with this covering seems to be reinforced, while other fibers passing at right angles form an arrangement resembling wicker-work. In the layer of optic nerve-fibers a similar arrangement may be observed."

ABSTRACTS FROM FOREIGN OPHTHALMIC JOURNALS.

By Casey A. Wood, C. M., M. D.

PROFESSOR OF OPHTHALMOLOGY, CHICAGO POST GRADUATE MEDICAL SCHOOL; OCULIST AND AURIST TO COOK COUNTY AND THE ALEXIAN HOSPITALS; ETC.

CATGUT SUTURE IN EXTENSIVE WOUNDS OF THE OCULAR TUNICS.

A very practical paper is Beccaria's[1] account of a case where suture of the conjunctiva and sclera was resorted to with good results in an extensive bulbar wound. After referring to the efforts made in this direction since Pomeroy's first attempt in 1865, and quoting largely from the literature of the subject, he relates the following history:

"C. A., aged 19, was injured on the morning of January 24, with a piece of a glass bottle, so thrown that it cut from before backward and from above downward the left eye and upper lid. He came to the clinic the next day and presented the following appearance: 1. Coloboma of left upper lid about 14 mm. in length, involving all the palpebral tissues and reaching the ciliary margin. 2. Wound of the conjunctiva and sclera stretching from the limbus 16 to 17 mm. 3. Coloboma of the iris, above and out. This portion of the iris appears pushed into the wound, and is probably the origin of the hyphoema that completely fills the anterior chamber and makes it impossible to say whether the lens is injured or not.

"Lying across the wound is a small blood-clot; there is no escape of vitreous. Tension is — 2; perception of light good. On the same day that the patient was admitted to the clinic three silk sutures were put into the palpebral wound. On the following day the conjunctiva and sclera were similarly treated with four catgut stitches. The tension of the eye continued to be minus; no traces of catarrh or infection of the conjunctiva; persistent hyphoema involving the whole of the anterior chamber; perception of light still good; a protective and antiseptic bandage, not compress, applied.

"Six days afterwards the palpebral sutures were removed, and the wound was found to be fully cicatrized. Patient remained twenty-two days in the hospital, and at the end of that time the sclero-conjunctival wound had entirely healed. The tension became normal very early; the hyphoema gradually disappeared (except a minute coagulum that persisted for some days on the central portion of the anterior capsule), revealing an entirely opaque crystalline.

[1] F. Beccaria: *Considerazioni sopra un caso di estesa ferita della congiunctiva e della sclerotica. Annali di Ottalmologia, Anno XXII*, 1.

"There remained also a slight ptosis, a linear cicatrix of the upper lid, a linear, smooth, and regular scar of conjunctiva and sclera which showed no tendency to retract, and an upward and outward coloboma of the iris. Pupil reacts to light; lens slightly absorbed below where the pupillary area is black, and seems partly filled with minute lenticular fragments. The blood-clot, previously referred to, finally disappeared. Projection good.

"At the end of October the scleral scar is still smooth; three-fourths of the crystalline is absorbed. Vision with + 11.0 D. = $\frac{1}{2}$, and with + 18. patient could read No. 5, de Wecker, at 20 centimeters. He had no appreciable astigmatism. The vision of sound eye is normal. On account of pieces of capsule and lens detritus occupying the pupillary area, the writer could not get a satisfactory view of the fundus."

"The patient refused to permit a discission, although it would doubtless improve his vision."

In the foregoing case, Bacceria followed the plan of Galezowski who passes the stitches through both sclera and choroid, thereby acquiring a firm hold upon the edges of the wound. The author lays down six rules for guidance in dealing with such serious wounds of the sclerotic: 1. Bring together the lips of the wound by stitches. 2. Use catgut. 3. Introduce as small sutures as possible, and, in entering them, carefully avoid dragging upon the bulbar membranes. 4. Practice a vigorous antisepsis. 5. Apply a protective bandage, not compress. 6. For several days enjoin absolute rest upon the patient.

PROPHYLAXIS IN CATARACT OPERATION.

Panas[2] reminds his readers that he recommended some years ago that a solution of biniodide of mercury should be injected into the anterior chamber with germicidal intent. This, he continues, has been followed by the use of warm boric acid with good effect. There still remains, however, a certain percentage of cataract extractions that, in spite of these irrigations and other aseptic precautions, do not escape infection. This is largely due to the fact that in a perfectly normal eye, with ideal cilia, lids and lachrymal apparatus, the staphylococcus albus and aureus can, alone and commingled, be found on every trial, and from cultures of these the cornea of rabbits can be inoculated and infective ulcers produced.

In a series of cases where the sac and lids had been well washed with the aqueous solution of mercuric iodide, cultures, although not such active ones, could still be grown from microbes gathered in these regions.

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[2] Panas: *Prophylaxie des accidents infectieux consécutifs a l'opération de la cataracte. Archives d'Ophtalmologie*, Oct., 1893.

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In a third series, in addition to irrigation with the watery solution of iodide, *the free borders of the lids were anointed with an oily solution of the biniodide*, and a bandage applied until the following day. Of seven cultures then made, two were negative and five showed traces of the growths. Of the rabbit's corneæ inoculated with the latter, four results were negative, and one only gave rise to a small circumscribed corneal abscess.

Experiments with growing colonies showed that a small quantity of the oil entirely stopped their growth.

Panas has, for several months past, in consequence of these experiments, been in the habit (as a preliminary to cataract extraction), of first washing out the eye with a solution of the biniodide, then brushing over the free borders of the lids with "biniodide oil," (4 to 1,000), after washing them with a solution of sodic carbonate. This is done the evening before the operation, and as a further precaution, a protective dressing is applied and left on until the moment of the operation. Since putting this plan into operation, 170 cases have been operated upon without the least local complication, whatever may have been the state of their general health.

ON THE TREATMENT OF CERTAIN EYE DISEASES BY SUBCONJUNCTIVAL INJECTIONS.

As the subconjunctival treatment, (Darier's method), of ocular diseases, and especially of deepseated changes within the eye is just now attracting some attention at home and abroad I have abstracted a very practical paper by Gepner[3] Jr., of Warsaw, on the use, in this manner, of mercuric chloride.

The indications for the employment of sublimate solutions are chiefly those of a *local* antiseptic, viz: in all acute inflammations of the cornea and iris, as well as in those cases where the general effects of mercury are also desired. A small (Pravaz) hypodermic syringe is used, preferably with a needle flattened at its point and made of platinum so that it can be sterilized in the flame. He uses the original Darier formula and injects at each sitting $\frac{1}{20}$ mg. or 0.0004 grm. of corrosive sublimate in solution.

Cocaine is first used and then the syringe point is entered about 1 cm. from the sclero-corneal junction and run about 1 cm. under the connective tissue. A bandage is then applied, to be removed on the following day.

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[3] B. R. Gepner, Jr.: *Ueber subconjunctivale Sublimat-Einspritzungen. Centralb. für prakt. Augenheilkunde*, Jan., 1894, 1.

Immediately after the injection the pain is quite severe and may last for hours, but finally the sensation is that of a foreign body in the eye. If a bloodvessel be injured, a subconjunctival bleeding results, which is slowly reabsorbed. On the day following the injection the eye becomes red, the connective tissue swollen, and at the point of entrance there are numerous minute hemorrhages. On the second to fourth day the eye is again quiet, and the injection may be repeated.

Care should be observed not to enter the syringe point twice at the same spot as this procedure sets up an adhesive inflammation between conjunctiva and Tenon's capsule, leaving a blue-white nodule difficult of penetration by the point of the syringe and very painful. With this exception, no further complication has arisen.

As to the number of injections, the writer takes the results obtained as his guides in acute cases; in chronic diseases the treatment must last much longer. If two or three injections produce no results, it is useless to continue them. In severe cases, especially in those of luetic origin, additional subcutaneous injections are valuable.

In the *cornea* where microbic influences are often at work the author thinks the injections are of special benefit. He gives a number of illustrative cases:

1. *A central corneal ulcer with hypopyon.* One-third of the A. C. filled with pus; severe ciliary pain. Patient had been unsuccessfully treated with atropia, iodoform and hot applications for three weeks. On the day after the first injection, (continuing the bandage and atropine), the hypopyon had decreased one-half, and the patient declared he had had his first comfortable night's rest. In four days the hypopyon had disappeared; in a week the ulcer is mostly covered with epithelium.

2. A workman with cornea wounded the week before by an iron splinter. There is a central, necrotic, corneal ulcer. A. C. is half filled with pus. After one injection the hypopyon began to disappear and no trace of it was seen in eight days; the ulcer now began to heal.

The author has had most success in these cases of infected ulcus corneæ.

3. Injury of left cornea and lens from a piece of iron a cm. long, which was sticking in the wound through which the iris had prolapsed. Over the eye a dirty bandage. Iron splinter removed an hour after injury and iris cut off. Some escape of lens matter. Atropine, iodoform, and protective bandage. The next day the

eye was perfectly quiet, but on the following day, the patient complained of intense pain in the eye itself; the superior lid was swollen and red, as was also the ocular connective tissue and conjunctiva. The corneal wound infiltrated; yellow-white spots on the iris and hypopyon. A sublimate injection was given at once. Before night time the pain was gone, and the hypopyon had disappeared. In three days the purulent iritis was better, and the wound was almost healed. In a week the only trace of the injury was a traumatic cataract and a *macula adherens*. Light perception and projection good. The author believes the injection saved the eye from an impending panophthalmitis.

4. *A case of purulent irodocylitis*, (with great tenderness, hypopyon and infiltration of corneal wound) in a man recently operated upon for senile cataract. This patient some years before had had a similar accident in the other eye, leaving him with V. = fingers at 2 m. A sublimate injection was given. Next day patient greatly improved, and after a second injection most of the symptoms disappeared. The eye was irritable for a long time, but finally, after an iridotomy, V. = $\frac{5}{50}$.

A fragment of steel in the lens, cloudy aqueous, corneal wound infiltrated; injected sclera. Foreign body 2x3 mm. removed, through corneal incision, with a pair of forceps. Iris hernia reduced by repositer. Injection. In forty-eight hours wound healed with all signs of irritation gone.

The writer has tried these local injections in cases of parenchymatous keratitis, especially where the origin of the disease was probably syphilitic, but the results were not encouraging, and he does not recommend their use in such cases. He cites one case where the use of the sublimate cut short a well-marked scleritis.

He also recommends it in cases of iritis, specific and other, and gives two examples where it proved of signal benefit. In one of these, the pupil only partially dilated under atropia, was covered with a yellow-white exudation, and there was a hypopyon 2 mm. high. After the symptoms had persisted for weeks under other treatment, a sublimate injection was given, and in forty-eight hours the exudation in the A. C. had gone, and the symptoms improved. Another injection in three days, and in ten days after the first injection the patient was well, with an irregular pupil.

The author thinks that this treatment is especially adapted to those cases where iritic gummata are well developed.

In a case of severe *iritis serosa* (cause not given), where after six weeks local and general treatment there was no improvement, ten subconjunctival injections brought about a complete cure.

Gepner now approaches the treatment of deep-seated diseases of the eye by this method. In some cases of chronic choroiditis he thinks he has improved the visual acuity somewhat. In one of these, (chorioretinitis), associated with myopia, the vision rose, after three injections, from R. = $\frac{5}{36}$ and Sn. 0.5 scarcely, to $\frac{5}{15}$ and Sn. 0.5. All the other twenty cases, with myopia and fundus changes, appeared to be more or less benefited by this treatment.

He has also employed the method in a typical case of retinitis pigmentosa with at least temporary improvement.

FRÄNKEL'S DIPLOCOCCUS IN OCULAR PATHOLOGY.

Gasparini,[4] of Siena, has given the result of numerous experiments and clinical observation in their relation to the causation of certain infective diseases of the eye. They are reported mainly in the form of exhaustive bacteriological studies and were carefully made both by inoculating rabbit's eyes, and by examining the discharges from infected human eyes. The former experiments were divided into four series: 1. Inoculations of cultures upon the conjunctiva. 2. Upon the cornea. 3. In the anterior chamber. 4. In the vitreous chamber. These inoculations produced the most destructive results—the rabbit being especially susceptible to poisoning, local and general, from the diplococcus—and led Gasparini to believe that this microbe is the most important, if not the active agent (especially virulent in purulent nasal and dacryocystitic soils), in producing such serious diseases as spreading ulcer of the cornea, hypopyon keratitis, and the like, with their disastrous consequences.

Bacteriological examinations were made of the discharges from twenty-five human subjects, the histories of which are given. In hypopyon keratitis and its associated diseases the diplococcus was found in the discharges, and rabbits were successfully inoculated with the pure cultures. "At this point," says the author, "we come to a question rather embarrassing to me—how does the diplococcus, first of all, come in contact with the eye? How does the assailant reach that organ? How do we also explain cases of spontaneous septic ulceration of these cornea? To all the questions I believe I can now reply in a manner clear and convincing, that the diplococcus of Fränkel is present as a saprophyte upon the normal conjunctiva of healthy individuals, just as it is found in the saliva and in the mucus of the nasal fossæ."

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[4] E. Gasparini: *Il diplococco di Frankel in patologie oculare. Annali di Ottalmologia*, 4-5, 1893, 51 pages.

The moral of the story is that simple injuries to the cornea should not be lightly treated in the presence of a dacryocystitis or a purulent rhinitis, nor should we remove a foreign body from the cornea with a dirty spud, or neglect to advise a copious aseptic wash after digging a *corpus alienum* from the same region, lest the diplococcus, lying in wait, enter in and do his deadly work.

THE BROWN-SEQUARD TREATMENT IN OCULAR THERAPEUTICS.

Two articles in a recent journal on the employment of hypodermic injections of certain organic (orchitic) fluids, after the manner of the late Brown-Séquard, are worthy of notice, although it is questionable whether their value is any greater in ocular than in other diseases. The first is by de Wecker,[5] who draws attention to the fact that writers on ophthalmological matters, with one exception, have remained silent upon a subject that has in late years attracted so much attention in medical circles.

When Brown-Séquard, four years ago, addressed his first communication to the Biological Society the author applied to him for some of the testicular fluid and desired to be supplied with the proper apparatus, and to be instructed in the preparation of the remedial juices. His idea was to use it in the treatment of patients affected by optic nerve atrophy. A large number of cases of gray atrophy, optic atrophy of central origin and retrobulbar neuritis, were carefully and systematically treated and observed.

The negative results obtained led de Wecker to believe that his method of preparing the organic fluids was defective, so he obtained some prepared by M. d'Arsonval, Brown-Séquard's associate, and repeated the experiments. The results were precisely the same as before; with one or two exceptions the treatment produced no effect.

The exceptions include the case of a lady whose vision (finger counting at 3 meters), rose after these injections to normal in one eye, and was greatly improved in the other. The case was, however, one of retrobulbuor neuritis *post influenzam* which, as everyone knows, is capable of spontaneous improvement, and the organic injections had been alternated with quinine bromohydrate and strychnia nitrate.

The writer also witnessed a temporary arrest of the eye symptoms in several cases of tabes dorsalis, but he very pertinently asks himself whether this may not be the experience occasionally noted

[5] De Wecker: *Les injections séquardiennes en thérapeutique oculaire. Annales d'oculistique*, November, 1893, 346.

in certain forms of locomotor ataxia? As an answer to that question de Wecker tells of meeting Charcot in consultation over a patient where the diagnosis of tabes was in question. The disposition to show apparent arrest or improvement in these cases, with and without treatment, was referred to by Charcot, and the latter finally and abruptly asked de Wecker: "Have you ever cured a case of tabes?" And the reply, in the form of another question, "and you, my dear Professor?" was met by a silence more impressive than words.

Finally, de Wecker believes the injections to be entirely innocuous, and thinks they may act as a tonic and perhaps produce at the same time a moral effect upon a certain class of patients.

In a footnote the writer speaks of the great cost of the small glass tubes containing the testicular fluid, (20 francs per dozen), thus prohibiting its use in hospital practice. He gives directions how it may be more economically obtained for clinical purposes.

De Bourgon[6] gives a carefully prepared paper on the treatment of four cases of optic nerve atrophy, the histories of which are furnished in detail. The results in every case were absolutely negative. Not only that, but both earlier and subsequent employment of injections of antipyrin, and the use of additional remedies by the author and others *did* have some measurable effect upon the disease. The first case was one of advanced white atrophy; V. R., $= \frac{1}{6}$; V. L., = p. l., the result of ill defined cerebral changes. The second patient also had well-marked atrophy; V. R., $= \frac{1}{60}$, V. L., = fingers at 3 m. In the third instance there was a secondary atrophy produced by the presence of a cerebral neoplasm. The last case was a diabetic atrophy with very low vision; R. $\frac{1}{50}$; L. $\frac{1}{60}$.

De Bourgon advises the use of antipyrin injections (introduced by Valude), in optic atrophy, and says that two of the above mentioned patients upon whom they were used, obtained greater relief than from all the other measures employed in the treatment of their disease.

SYMMETRICAL COLOBOMATA OF BOTH LENSES.

Chibret[7] reports the following case:

G., aged 15. An examination of the eyes with a plane mirror shows both pupils to be transversely, symmetrically, and almost equally divided

[6] De Bourgon: *De l'emploi des injections d'extrait organique de MM. Brown-Séquard et d'Arsonval dans le traitment de différentes formes d'atrophie du nerf optique.* Ibid.

[7] Chibret: *Colobome symétrique des deux cristallins. Revue générale d'ophtal.*, XXII, II, 1893.

into two parts by a dark curved line whose convexity is downwards and inwards. Below this line there is aphakia; above it there is a lens which the writer believes has been used by the patient in learning to read. V. is $\frac{1}{10}$ only; with + 12. D. V. = $\frac{1}{4}$ in both eyes. With + 20, D. patient reads small print easily, but without glasses ordinary type is not made out or is deciphered very slowly.

After dilating the pupils with atropia, both the direct examination and the oblique illumination show the defect in the body of the lens to extend throughout its whole width and thickness while the periphery is, except in the aphakic region, entirely normal. The edges of the coloboma proper, are free of opacities. This can be proved by examining them with a magnifying glass, the opaque appearances shown by the direct examination being due to the irregular refraction and reflection of the light by and from the uneven edges of the coloboma.

OTOLOGY.

NOTES FROM FOREIGN OTOLOGICAL JOURNALS.

By T. Melville Hardie, B. A., M. D.
of Chicago.

Professor of Laryngology and Rhinology, Post-Graduate Medical School; Professor of Otology, College of Physicians and Surgeons; Assistant Surgeon Ear Department Illinois Charitable Eye and Ear Infirmary; Laryngologist and Otologist, St. Elizabeth Hospital.

SINUS THROMBOSIS FOLLOWING MIDDLE EAR DISEASE.

Jansen, (*Archiv. f. Ohrenheilk*, XXXVI, 1 and 2, December, 1893), finds that choked disc occurs occasionally in uncomplicated thrombosis of the lateral sinus; infrequently also in uncomplicated pachymeningitis ext. pur.; is most frequent in sinus thrombosis complicated with pachymeningitis ext. pur., next in sinus thrombosis with arachnitis. Occurs frequently with abscess of the brain; it appears also to develop in exceptional cases in uncomplicated empyema of the mastoid. It is always bilateral; it accompanies from thirty-five to fifty per cent of the cases of thrombosis, purulent and non-purulent. The optic neuritis develops within a few days after hyperaemia exists, and does not always stop with the thorough removal of the purulent focus. When the extradural abscess has been evacuated, with or without the incision of the sinus, the increase of the choked disc is not indicative either of

another abscess which has been overlooked or of a fatal result; vision is in the majority of cases not particularly reduced. Recovery requires many months and atrophy does not result. While optic neuritis may be absent in very extensive thrombosis and extradural abscess, its existence is, nevertheless, of value in the diagnosis of sinus thrombosis. Typhus malaria and pneumonia may be positively excluded, and, as a rule, an intra-cranial cause looked for. It must, at the same time, be remembered that the absence of eye symptoms does not exclude the possibility of thrombosis. The clinical and post-mortem examinations of Jansen's cases disprove the assertions of Knies, (Beziehungen des Sehorganes, u. s. w., pp. 147 and 158), to the effect that papillitis is only exceptionally present in other affections than tumor of the brain.

The existence and causation of nystagmus in relation to diseases of the ear are discussed, and in the absence of evidence of affection of the labyrinth or of leptomeningitis is considered as pointing to a phlebitis or peri-phlebitis in the vicinity of the temporal bone.

The diagnosis of sinus thrombosis is made more certain if the jugular vein is involved. It occurred in about one-third of Jansen's cases.

The prognosis is unfavorable; is always fatal in diffuse purulent leptomeningitis; very bad in circumscribed purulent leptomeningitis and abscess of the brain, or when there are extensive pyemic manifestations in lungs, heart, larynx. In view of the fact that meningitic symptoms frequently accompany uncomplicated sinus thrombosis, operation is not contraindicated unless well marked symptoms of arachnitis are present. Metastases in the lungs do not forbid operation.

Of Jansen's forty cases nine recovered. In one of these, however, the diagnosis was uncertain. Since August, 1890, he has opened the sinus thirteen times with six recoveries.

Appended to the paper is an extensive list of the literature of the subject, 197 references.

USE OF THE POLITZER BAG IN UNILATERAL AFFECTION OF THE MIDDLE EAR.

Falta[1] used a manikin in his preliminary experiments. When affection is unilateral with perforation of drumhead, if one inserts a small tube in the nostril on the side of the healthy ear, the air

[1] Eine neue methode zur Behandlung der Einseitigen mittelohrerkrankungen mittelst Luftdouche. Wien, med. woch. 1892, No. 52.

which would otherwise enter that ear escapes by the tube. When there is no perforation it is advisable to increase the resistance in the healthy ear by closing the external auditory meatus on that side with the finger.

The effect of the air douche upon the affected ear is the same as when the bag is used in the ordinary way.

NEW CASE OF OTOLITH,

Secchi, (*Archiv. Ital. di Otol. Rinol. e Laringol.*, 1893, 1), reports one found in an ear in which persistent suppuration followed measles. Microscopic examination demonstrated a kernel of cotton with stratified layers of calcarous matter surrounding it.

FOREIGN BODY IN THE TYMPANIC CAVITY. EXTRACTION. TETANUS.

Schmiegelow, (*Revue de Laryngol., etc.*, March, 1894), reports a case which emphasizes the disastrous consequences which may result from unskilled attempts at the removal of foreign bodies from the external meatus. According to the mother's story, the stone which was put in the ear by the child could be distinctly seen. The physician to whom she was at first taken, used forceps instead of trying to remove it by syringing. The stone was pushed through the drumhead, and an acute suppurative middle ear inflammation resulted. When Schmiegelow saw it eleven days after, it was impossible to remove it through the canal and the auricle was detached, a portion of the posterior superior wall removed, and the stone extracted. Two days after this operation the first tetamic convulsion occurred. Death followed forty-eight hours later. The bacilli of tetanus were, in the writer's opinion, in the particles of earth on the stone. The usual period of incubation in man is from four to eight days.

INJURIES TO THE EAR CAUSED BY FIREARMS.

Binaud, (*Arch. gen. de med. avril et mai*, 1893), reviews completely the causes, symptoms, diagnosis and treatment of these accidents. The question of immediate surgical interference is discussed at length.

CONTRIBUTION TO THE STUDY OF THE STATISTICS OF EAR DISEASES.

Gradenigo, (*Annales des mal. de l'oreille, etc.*, October, 1893). We shall before long be able to predict the probabilities with

respect to the ear to be affected, our age at that time, the particular disease with which our ear is to be favored, much as life-insurance experts inform us as to the year of our demise. The latest statistician is Gradenigo of Turin, whose papers so frequently enrich the principal otological journals of Italy, Germany and France. Some of the tables presented in his most recent paper are of considerable interest, and it is, perhaps just as well to know that if one is a man and only one ear is to be affected the chances are that it will be the left; if, on the other hand, one has the good fortune to be a woman, let her watch with care the right.

DEAFNESS AND SYPHILIS.

Delie. (*Annales des mal. de l'oreille, etc.*, August, September, October, 1893).

The relations of tertiary syphilis to the ear are very fully considered. The October installment deals with the treatment which is discussed under the following heads:

1. Pilocarpine, which is to be administered as soon as possible, the dose varying according to the age, constitution, condition of heart and kidneys, etc., of the patient.

2. Strychnine, but little employed.

3. Mercury, "the anchor of safety." The best method of administration is that which gives the most rapid effect, (*a*) hypodermic injections of sublimate. Painful; are never used in children; therapeutic action weak, because the sublimate is so rapidly eliminated from the system. When employed at all the following formula is recommended:

Corrosive sublimate	1,0.
Sod. chlorid	2,0.
Cocain hydrochlor	0,30.
Aq. dest.	100,0.

Salicylate of mercury, though less painful and not so likely to produce abscess, is too weak. (*b*) Injection of calomel; use in this way is apt to expose patient to the danger of toxic accumulation of mercury in the system.

Calomel	0,50.
Liquid vaseline	10,0.

(*c*) Sublimate baths not to be recommended.

(*d*) The use of a mercurial ointment—the quickest, most effective and most lasting. In adults 2-6 grammes to 8-10 grammes of excipient daily until slight salivation occurs. In children $^1/_2$ to

1-2 grammes a day or every second day if child is cachectic. (*e*) In infants and those who cannot bear inunctions, the internal administration of the drug is to be recommended.

4. Iodide, in adults 1.50—4 to 8 grames a day.

5. Continuous current.

The most effective treatment will always be the preventive.

NOTES FROM CURRENT AMERICAN OTOLOGICAL LITERATURE.

By Leonard A. Dessar, M. D.,
of New York.

visiting laryngologist and otologist to mt. sinai hospital dispensary; visiting laryngologist to st. mark's hospital; formerly assistant surgeon manhattan eye and ear hospital, etc.

DENTITION WITH DISEASE OF THE TEETH AS A CAUSE OF EAR DISEASE.

An article on this subject by Dr. Laurence Turnbull, (*Medical and Surgical Reporter*, March 31, 1894), presents so many practical points of interest as to warrant a full abstract:

Every physician of experience has found that eruption of the teeth is a cause of earache, followed by pain and a discharge of pus and a laceration of the drum membrane. Especially so when (as frequently happens), the teeth are so impacted that they cannot erupt, if not relieved by lancing the gums. Again, the so-called wisdom teeth, from their reflex irritation and pressure, are a cause of deafness and should be removed. Caries of the teeth, caused by acids and fungi (leptothrix fuocatis), is usually attended by both toothache and earache from extension into the ear by the Eustachian tube.

If children and adults are of feeble frame and the vitality is lowered by constitutional diseases like syphilis, scrofula or consumption, the teeth are generally of a chalky-white color, brittle or soft, and decay with great rapidity by the action of the leptothrix living on carious stumps, which decay impairs digestion and nutri-

tion. When a cold is taken, these stumps being dead, there is almost always an attendant coryza. This affects the ears, causing a running ear, better known by the term oterrhea, but more correctly as an acute otitis media catarrhalis or purulentia. Trophic changes also occur in the Eustachian tube or middle ear with alveolar abscess or with disease of the antrum of Highmore. The nasal mucous membrane is also a fruitful cause of ear trouble.

The tartar, it is stated, protects the tooth substance, but by pressing away the gum and causing absorption of the process, it causes irritation and loosening of the teeth, and gives rise to changes in color and healthy character of the gums, and the whole buccal mucous membrane; this red condition extending into the throat and ear is often an indication of disease of the bronchial tubes and lungs.

In hospital and surgical practice a solution of the permanganate (24 grains to the ounce), is usually kept on hand as an antiseptic, deodorant and detergent. Of this solution half a drachm, or thirty drops, may be added to a pint of boiling water, this can be used in the nose, mouth, throat and ear when there is a discharge of pus from the meatus.

In passing we would simply state our personal experience in regard to dental plates. These should be of gold, platinum and dark vulcanite. Certain forms of vulcanite colored by mercury (vermillion), we have found to produce disease of the gums and buccal cavity extending to the ear.

In regard to fillings, we prefer gold, but there are cases in which gold cannot be used; then a soft material should be used free from acids and mercury.

The following is a list of some of the diseases of the ear due in part or wholly to reflex irritation of the teeth: Acute and chronic catarrhal inflammation of the middle ear; acute, subacute and chronic purulent inflammation of the middle ear; otitis externa, alveolar abscess and ozena. Sometimes we have found the metal filling forced down into the jaw by too great a pressure of the mallets which are now used, and in one case such was the cause of profound deafness; hearing was improved after the removal of the pressure. Such a case as this, however, is fairly to be charged to malpractice. No dentist should dream of packing gold or other metal in the apices of the roots; the apices may be closed with other kinds of stopping, (none of which ought to be, nor usually is, so forced as to extrude), and then the body of the root is filled with gold or other material.

REMOVAL OF THE OSSICLES IN CHRONIC DISEASES OF THE MIDDLE EAR.

Dr. H. McMorton (*Northwestern Lancet*, March, 1893), concludes an exhaustive paper on this subject as follows:

1. Whatever theoretical grounds may be taken to the contrary, these operations within the middle ear are free from unpleasant sequelæ as any other surgical operation.

2. In cases where an exploratory opening is made in the drumhead for mobilization, or removal of stapes, or incus, cocaine may be used as the anesthetic. In cases where it is best to remove the membrane entire, with one or more ossicles for chronic discharges, it is best to give general anesthesia.

3. The operation of partial myringectomy with removal or mobilization of one or more bones of the middle ear is the only possible means to cure many cases of chronic tympanic vertigo.

4. The results in the sclerotic (also called atrophic) form of chronic catarrh are not as good as in the hypertrophic as regards improving the hearing, and in neither of these is the prognosis as favorable for the improvement of hearing as in disturbances in the transmitting apparatus resulting from chronic purulent disease. In a letter from Dr. Frederick L. Jack, of Boston, he sums up by saying:

"In the hypertrophic cases there have been a few remarkable improvements in hearing, some only slightly improved, and others not at all. In some twenty cases of sclerosis the results were very discouraging. I should say less than five per cent were permanently improved."

5. It is the only rational resort in cases of severe tinnitus due to organic change in the transmitting apparatus, and the results are exceedingly satisfactory in such cases.

6. In chronic discharges that have resisted the ordinary methods, the obstruction to the free exit of purulent secretion should be removed, the cavity freed from unhealthy tissue and treated as any suppurating wound elsewhere.

THE USE OF PILOCARPIN IN DISEASES OF THE MIDDLE EAR AND LABYRINTH.

Dr. Jirmunski, (*Medical Record*, March 31, 1894), states that his experience with the use of pilocarpin in acute disease of the middle ear and labyrinth has been a satisfactory one. In old cases it is quite useless, both when used subcutaneously and by direct instillation. He relates two cases of deafness due to acute disease

of the labyrinth, which were rapidly cured by the use of pilocarpin. The first case was a young man aged 19, who fell down some steps, was unconscious for upward of two hours, and had quite an extensive hemorrhage from the left ear. Thirteen days after there was found complete deafness to both bone and air conduction in the left ear. The diagnosis was traumatic labyrinthitis with hemorrhage. Pilocarpin 0.004 gm. dose was injected subcutaneously and this amount increased daily one milligram till 0.02 gm. was reached. At the same time, every second day, four to ten drops of a two per cent solution of iodide of potassium was dropped in the ear. After the fifth injection, hearing in the left ear began to be present, and after nineteen injections hearing was quite restored. The second case was one of syphilitic labyrinthitis with sudden advent of deafness, which was handled in a similar manner. After twenty-four injections the patient's hearing was entirely restored.

EAR COMPLICATIONS OF INFLUENZA.

Dr. Ramon Guiteras (*Medical Record*, January 20, 1894), in an article on the causes, complications and treatment of la grippe, says that "Eustachian catarrh and otitis media are complications which exist in a great many cases, and are at times only noticed by the specialist, general practitioners frequently attributing the symptoms to the neuralgic pains of the disease, or to a sense of fullness due to quinine, which is being taken by almost all influenza patients; and thus ruptures of the tympanum have occurred in many cases where paracentesis ought to have been performed."

Dr. Edwin R. Maxson (February 17, 1894), in speaking of the treatment of influenza, suggests "that in cases in which the structures of the internal ear or of the eye become involved, blisters back of the ears, to the back of the neck, and temples may be required and perhaps repeated."

RHINOLOGY AND LARYNGOLOGY.

ABSTRACTS FROM CURRENT LARYNGOLOGICAL AND RHINOLOGICAL LITERATURE.

By M. D. Lederman, M. D.,
of New York.

THE PATHOLOGICAL AND CLINICAL FEATURES OF ATROPHIC RHINITIS.

Mr. Wyatt Wingrave, (*Journal L. et R.*, VIII, No. 2). In a highly interesting paper, the author expresses the opinion that atrophic rhinitis is a specific disease. He describes the histological changes observed in portions of tissue removed from living subjects, and bases his statement on the pathological metamorphoses. The most striking feature noticed was the presence of hyaloid bodies which increase in number with the duration and severity of the disease. "They consist of small, refractive, rounded, homogeneous masses, imbedded for the most part in the interlobular tissues of the glands, and in the adjacent lymphoid tissue, but are also seen amongst the surface stratified epithelium. Glandular changes were found to vary from a simple cloudy swelling of the secretary cells, with blocking of the lumen, to a complete disorganization of the acini by ingrowth of small cell inflammatory tissue. In every specimen the lymphoid tissue gave evidence of change." No distinct characteristic degeneration was observed in the bony structure. Mr. Wingrave explains the analogy existing between dry catarrh and lupus, and states that the former does not ulcerate spontaneously, but ends in sclerosis.

The most impressive uniform change noticeable was "thedisappearance of lymphoid structures. In fifty-six of sixty cases, the faucial and pharyngeal tonsils had entirely disappeared."

He thinks shrinking of lymphoid tissue a significant feature of the disease. He does not believe that atrophic rhinitis is the result of a badly treated catarrh. Constitutional influences are important factors in its production. In thirty-seven cases he obtained a definite family history of phthisis. The average age

for the appearance of the affection was seventeen. There were forty-nine females and eleven males. "In females it was the exception to find them not suffering from leucorrhœa or amenorrhœa, and in every instance the nasal phenomena were intensified at the menstrual flow."

During the disease the nasal mucous membrane becomes converted into a cutaneous structure with a corresponding change in secretion, (a perverted function). The author did not find pus cells in the nasal discharge, and therefore disagrees with authorities who name the secretion pus or muco-pus.

OPERATION FOR DEPRESSED NOSE.

S. K. Ellison, M. R. C. S., Eng., (*The Lancet*, No. 7, Vol. I, 1894).

The author offers an original operation for cosmetic improvement. He thinks the want of success in other methods was due to the non-perforated supports used. He used a perforated gold plate.

"An incision with a tenotomy knife is made on either side and across the nose a couple of lines below the lower part of the depression. The flap is raised sufficiently to permit the plate to rest upon the subjacent tissues. The flap of integument is then drawn over the plate and sutured with horsehair along the line of incision; a thread of catgut as a drain being inserted in the lower portion of the incision to be removed in twenty-four hours. Collodion was painted over the line of wound but not at the point of drainage. The parts healed by first intention and no discomfort was experienced by the patient. The plate has been in position for seven years, and no inconvenience has been complained of by the wearer."

SUBLIMED SULPHUR AS A LOCAL APPLICATION IN DIPHTHERIA.

Dr. C. Baümler, of London, (*British Medical Journal*, No. 1731.)

After repeated trials of many medicaments, the author states that applications of powdered sulphur to the diseased mucous membrane have given better results than any local application which he has tried before. The powder is applied with a camel's hair brush every hour or two, or three times a day as indicated. He has seen cases of gangrene of the uvula and soft palate take a favorable

turn under its use. Gargling with a weak solution of potassium permangenate is recommended. How the sulphur acts he is unable to say, but thinks same is purely local.

SARCOMA OF THE LARYNX.

Dr. F. T. Paul, Liverpool, (*Liverpool Medical Chirurgical Journal*, No. 26).

The author reports two cases, *i. e.*, an intrinsic and extrinsic manifestation. In the first case the larynx of a healthy-looking lad, 12 years old, was filled with a large white cauliflower-like mass, rising nearly to the tip of the epiglottis. Macroscopically it resembled papilloma, but the microscope revealed its malignant nature. An extra laryngeal operation was performed in the usual manner. The growth was removed with the curette, but no portion of the larynx was excised. The boy made a good recovery; the wound healed by first intention. Ten days after the operation the tracheotomy tube was discarded. Five months later the patient was still free from a recurrence. The author thinks clinical experience affords much evidence of the mild and modified character of the malignancy of sarcoma in this position, and so encourages operators to remove the growth without sacrificing the organ.

SUPPURATIVE PERIOSTITIS OF THE LEFT INFERIOR TURBINATED BONE DUE TO A DISEASED TOOTH.

Dr. R. Dreyfuss, Strasburg, (*Wiener Medizinische Presse*, Vol. XXXV, No. 10).

This peculiar condition was observed in a woman 28 years old. The patient noticed a swelling of the left cheek which gradually extended towards the nose. No fever accompanied the swelling; pain was not severe. Examination found a swelling of the inferior turbinated bone. A diseased tooth was present in the upper alreolar process, left side, but same was not painful. Expectant treatment was prescribed as no suppuration was then present. A week later the patient expectorated some foul-tasting pus which came into the mouth posteriorly.

A puncture was made with a Pravaz syringe, and a syringefull of pus was obtained. The second attempt brought blood. The maxillary antrum was free from pus. Granulations over the inferior turbinated were reduced by means of galvano-cautery, followed by applications of trichloracetic acid. Boric acid solution was the cleanser prescribed. A swelling at the inner angle of

the eye was filled with serum; the probe did not reveal denuded bone. The periostitis was secondary to caries of the second molar.

PRIMARY ERYSIPELAS OF THE LARYNX.

Herzfeld, Berlin, (*Journal L. R. et O.*, Vol. VIII, No. 3).

The attack appeared suddenly in a patient 25 years of age. Difficulty in swallowing, shivering, with pains in the neck, were the symptoms at the onset. A few days later, suffocative attacks were experienced. Laryngoscopic examination showed edema of the epiglottis, ary-epiglottic folds, arytenoid cartilages, and ulceration of the epiglottis. The condition ended favorably under ice treatment. Streptococci and staphylococcus pyogenes aureus were found in the bacteriological examination.

THE USE OF DILATING SOUNDS IN NASAL SURGERY.

Winckler, Bremen, (*Internationeles Centralblatt für Laryng., Rhinolog., etc.*, Vol. X, No. 9), recommends the employment of nasal bougies in hypertrophic rhinitis. The parts should be cocainized before introducing the instruments. A salve of cocaine and vaseline should be applied to the sound as a lubricator. This method is of especial value in cases of squechnia, resulting from previous operation. (In this sequela I have found the substance, spunk, or "surgical sponge," of great service in preventing these adhesions from forming. M. D. L.)

PRIMARY GRANGRENE OF THE PHARYNX.

M. B. Blumenan, (*Ibid*), reports a case of grangrenous ulcer of the right tonsil following a naso-pharyngeal catarrh. In spite of treatment it extended to the gums and hard palate in three weeks. Severe pain, foeter from the mouth, and high temperature were marked symptoms. Patient died at the end of three weeks. He had previously suffered from gingivitis with bleeding from the gums and nose. Scurvy was suspected.

BACTERIACIDE PROPERTIES OF THE NASAL MUCUS.

Wurz and Lermoyez, (*Ibid*), state that the nasal cavities are a common site for an assemblage of numerous bacteria. Their disturbing effects, however, are prohibited by the powerful antiseptic properties of the normal nasal mucus. This assertion has been proven by experimentation.

TWO CASES OF CONGENITAL HYPERTROPHY OF THE TONGUE.

Dr. W. F. Chappell, New York, (*Manhattan Eye and Ear Reports*, No. 1).

This odd manifestation was observed in a male 35 years of age, and in a female 17 years of age. Cold and indigestion brought on acute symptoms. Menstruation had a similar effect in the second case. There was a general varix in both instances. Operative interference was contraindicated on account of the numerous vessels implicated. Hygienic and dietetic treatment was prescribed.

BOOK NOTICES.

AN OUTLINE OF THE EMBRYOLOGY OF THE EYE. By Ward A. Holden, A. M., M. D., of New York. G. P. Putnam's Sons publishers, New York. Price 75 cents.

This little book of about 100 pages won the Cartwright prize for 1893. It is based upon the examination of a great number of specimens—embryos of chicks, pigs, etc., and shows good careful work and observation. The numerous illustrations are from original pen-drawings by the author, and are all good. The book is handsomely printed.

DUANE'S STUDENTS' DICTIONARY OF MEDICINE. The Students' Dictionary of Medicine and the Allied Sciences. Comprising the pronunciation, derivation and full explanation of medical terms, together with much collateral descriptive matter, numerous tables, etc. By Alexander Duane, M. D., Assistant Surgeon to the New York Ophthalmic and Aural Institute; Reviser of Medical Terms for Webster's International Dictionary. In one square octavo volume of 658 pages. Cloth $4.25; half leather $4.50; full sheep $5.00. Philadelphia, Lea Brothers & Co., 1893.

The omission of obsolete and rare terms and the presentation of words in actual use, only, with their accurate and brief definitions makes "The Students' Dictionary of Medicine" one of the most convenient dictionaries for the student and reading physician to consult. Descriptive and explanatory matter being arranged under special headings, instead of being represented by inadequate definitions, will merit the approval of all who consult the Dictionary, as the causation, symptoms, and treatment of diseases—the origin, description, and therapeutic action of drugs can be readily ascertained at a glance. Anatomical data—Bacteria, Fermentation, etc., are exhibited in tabular form so as to enable the student to fasten their descriptions in his memory.

The typography, paper and binding are as good as could be desired.

A TEXT-BOOK OF DISEASES OF THE EAR AND ADJACENT ORGANS. By Dr. Adam Politzer, Imperial Royal Professor of Aural Therapeutics in the University of Vienna; Chief of the Imperial-Royal University Clinic for Diseases of the Ear in the General Hospital, Vienna. Translated into English from the third and revised German edition, by Oscar Dodd, M. D., Clinical Instructor in Diseases of the Eye and Ear, College of Physicians

and Surgeons, Chicago. Edited by Sir William Dalby, F. R. C. S., M. B., Consulting Aural Surgeon to St. George's Hospital, London. In one large octavo volume of 748 pages, with 330 original illustrations. Cloth $5.50.

It is a pleasing task to read so complete and exhaustive a work as Professor Politzer's "Text-Book on Diseases of the Ear." The author has brought this edition up to date and discussed the injection of pilocarpin, deafmutism, and the newer methods of aural surgery, such as excision of the drumhead and ossicles, and chiseling away of the posterior superior wall of the meatus, the latter being illustrated by numerous wood cuts. The extensive index of literature gives evidence of the fact that the labors of others have also received due consideration.

The entire appearance of the work—the paper, the printing and the illustrations—is excellent.

NEW TRUTHS IN OPHTHALMOLOGY. By G. C. Savage, M. D., of Nashville, Tenn. Published by the author.

This book contains 152 pages, thirty-two illustrations. The contents consists of a number of meritorious papers contributed to the literature of Ophthalmology by Dr. Savage.

The paper, printing and binding are in keeping with the merits of the contents of the book. Very good.

A NEW OPHTHALMOLOGICAL JOURNAL—THE REFRACTIONIST —We have been waiting for *The Refractionist* and it affords us much pleasure to announce its arrival. The first number contains good practical and useful papers by men with well-earned reputations.

It is edited by Francis F. Whittier, M. D., of Boston, in conjunction with Dr. W. F. Southard, of San Francisco; Dr. W. E. Baxter, of Bangor, Me.; Dr. J. W. Park, of Harrisburgh, and Dr. E. M. Marbourg, of Pueblo, Colo. It is a journal of practical ophthalmology and an exponent of the refraction world. The first number presents a good appearance, and we wish *The Refractionist* a long and useful life. It will be published monthly. Subscription price, $2.00 yearly. Subscriptions should be addressed to the editor, Dr. Francis F. Whittier, 74 Boylston street, Boston, Mass.

PROFESSIONAL NEWS.

The programme of the Section on Laryngology, Rhinology and Otology of the Louisiana State Medical Association contains the titles of a large number of papers. The section will be well represented, and an interesting and profitable meeting is expected which will take place in New Orleans, May 29, 1894. Dr. W. Scheppegrell, of New Orleans, is chairman of the section.

Dr. Dunbar Roy, of Atlanta, Ga., was elected to the chair of Ophthalmology and Otology in the Southern Medical College while he was in Europe last year, and he accepted the professorship and entered upon the duties thereof on his return to America.

Dr. Walter R. Parker, late house-surgeon Wills' Eye Hospital, Philadelphia, has located at 32 Adams Avenue West, Detroit, Mich.

Dr. Hiram Woods of Baltimore, informs the ANNALS that the General Assembly of the State of Maryland has just enacted a bill for the prevention of blindness, it being the fifth State to enact such a law.

Dr. J. P. Parker, 701 Olive Street, Saint Louis, Mo., has been advised that there is a good opening for a well-trained Ophthalmologist in a beautiful city of about 50,000, west of the Mississippi river. The name of the city and full particulars will be furnished any subscriber to the ANNALS on application. (Enclose stamp to pay postage on answer).

DESCRIPTION OF A SET OF TEST CARDS AND CABINET FOR HOLDING THE SAME.

By John Welsh Croskey, M. D.,
PHILADELPHIA, PENN.

ONE OF THE ASSISTANT SURGEONS TO WILLS' EYE HOSPITAL.

THE very short life of the test cards now in general use led me to think of some means by which their life and usefulness could be prolonged. I made the first of these cards and cabinets for use in the clinic of the Wills' hospital where it proved of such advantage over the ordinary hanging test card, and met with such favorable comment that I was induced to further perfect the mechanical parts as shown in the wood cuts on next page.

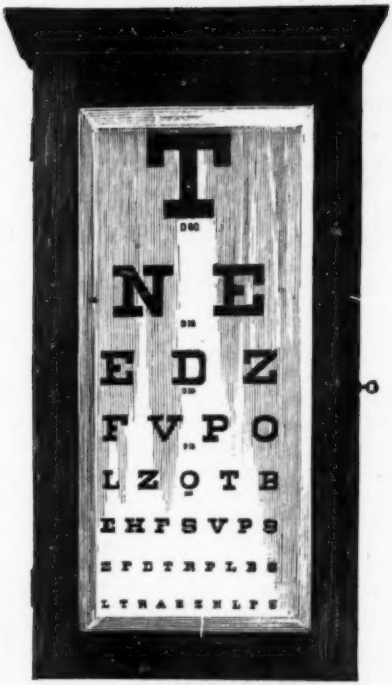
Fig. 1 shows the cabinet closed. Fig. 2, cabinet open, showing the test cards of which there are five. The cards are composed of letters and characters after Snellen, each letter is so made that when at its proper distance each part of it is separated from the other parts by an interval equal to not less than the arc subtending an angle of one minute at the nodal point and the whole letter subtending an angle of five minutes.

There are two cards composed of English letters, one card having letters with shoulders, and the other card, letters without shoulders. There is a German text card, an illiterate, or incomplete squares and the astigmatic card, on which I have used two disks instead of the one disk with the crossed lines.

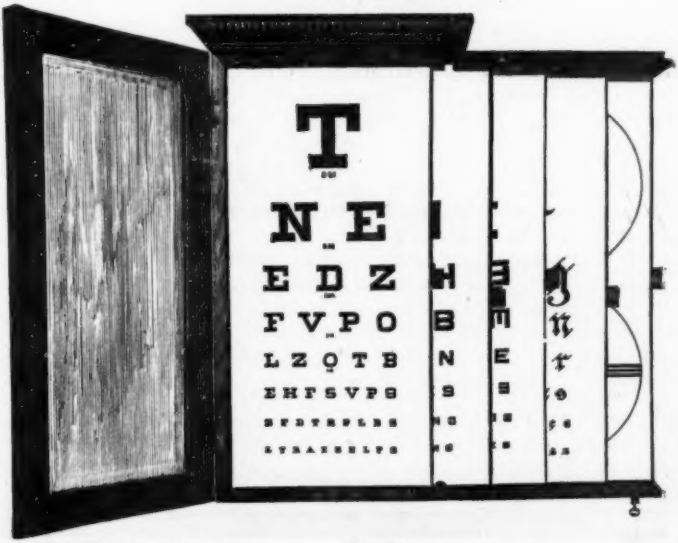
All the letters and characters are marked to correspond one with another. The largest letter being for sixty diopters, the next for thirty-six, twenty-four, eighteen, twelve, nine, six and five diopters. The last character to the bottom lines indicates the distance at which these lines should be read.

I think this is the first set of test cards published that are marked to correspond one with another. The cabinet contains six grooves. The quality of the cardboard is very good, being heavy white bristol board. The cards being in a case, when not in use, the case can be closed and the cards protected from dust, fly specks, etc.

The case with which the cards can be removed from the cabinet is a point in its favor for patients who are unable to read six-sixtieth type. The plate glass door shows at a glance what the cabinet contains. Mr. Fox of the Fox Optical Company having seen the cabinet in use at the hospital, and desiring to place the same within reach of some of their patrons has asked and received my permission to publish and manufacture the cards and cabinets.



(FIG. 1.)



1802 Chestnut Street. (FIG. 2.)

OBITUARY.

Dr. William Dickinson left Saint Louis January 24, 1894, with the intention of visiting in California for the purpose of recuperating, as his health had become impaired from the fatigue of professional cares. The long journey and sudden change of climate exhausted his vital forces, and he died a few days after reaching the home of his daughter at Stanford University. Dr. Dickinson was one of the pioneers in ophthalmology. He graduated from the Harvard University Medical School in 1851, after which he spent about five years in Germany, France and England visiting the various clinics and hospitals. Dr. Dickinson was fortunate enough to study with Arlt, Jaeger, Von Graefe, Sichel and Desmarres while ophthalmology was undergoing a process of evolution from an obscure and uncertain art to a well-defined exact science, which was brought about by the invention of the ophthalmoscope (1851), as it cast light into a cavity which before had been dark.

Dr. Dickinson continued his studies until 1857, after which he located in Saint Louis, where he practiced and taught ophthalmology continuously up to the day he left the city, excepting during the war, when he was commissioned Brig. Surgeon U. S. A. by President Lincoln. He was prominent in medical societies, and was consulting surgeon to various hospitals in the city. His labors in the interest of a State Eye and Ear Hospital form an important part in the transactions of the Missouri State Legislature of 1861 and 1872. He had bills introduced providing for the Missouri State Eye and Ear Hospital which were defeated each time by a small vote. He never became discouraged, but hoped to see such an institution built that would afford proper care and treatment for the unfortunate class of people who lose their sight and hearing, and become expensive wards to the State, for the want of proper care, and it is a lamentable fact, that Missouri has more blind than any other State, according to population (*vide* U. S. census). In placing the vast number of records, resolutions, bills, articles of incorporation, subscription lists, communications, etc., concerning the Missouri State Eye and Ear Hospital, in the hands of the writer, Dr. Dickinson expressed the hope that the information contained therein would not be lost, but would fall in good ground, and bear fruit that might be seen by those in whose behalf he had made the best efforts of his long life.

As a man, Dr. Dickinson was exemplary in life, high in ideal, steadfast in pursuit, conscientious in method, just in dealings, truthful in engagements, courageous in expression, and gentle in manner.

As a friend, Dr. William Dickinson was one in whose heart the angles of incidence and reflection were rendered equal from a surface unruffled by pride or any selfish quality. J. P. P.

TO CONTRIBUTORS.

COMMUNICATIONS *are invited from all parts of the world.*

Authors who propose to favor the ANNALS OF OPHTHALMOLOGY AND OTOLOGY with contributions are requested to observe the following:—

1. In accepting an article for publication under the head of "ORIGINAL COMMUNICATIONS," it is done with the understanding that it is to be contributed to the ANNALS *exclusively*, and that copies or abstracts of the same have *not* been and will *not* be published in any other journal.

2. Writing must be distinct and plain, and *especially all proper names.* (*If possible a manuscript should be type-written.*)

3. Proofs will be furnished authors for correction and revision, but it is requested that alterations be limited to what is of essential importance, as changes in the copy are equivalent to resetting, and cause additional expense and much annoyance.

4. The ANNALS especially desires brief, mature, concise articles on practical subjects, as its readers are busy physicians who desire results, therefore the author who condenses expression enhances the value of his contribution and is rewarded by having it extensively read.

5. Authors will be furnished with reprints of their articles, in pamphlet form, handsomely printed on the finest quality of paper, at cost. (See next page.)

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